







~~Chemistry~~
A COLLECTIVE INDEX

OF THE

TRANSACTIONS, PROCEEDINGS
AND ABSTRACTS

OF

THE CHEMICAL SOCIETY

1903—1912

PART II—INDEX OF SUBJECTS

A—I

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LONDON:

GURNEY AND JACKSON (SUCCESSORS TO J. VAN VOORST),
33 PATERNOSTER ROW, E.C.

A COLLECTIVE INDEX

TRANSACTIONS, PROCEEDINGS
AND ABSTRACTS
THE CHEMICAL SOCIETY

RICHARD CLAY & SONS, LIMITED,
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ABBREVIATIONS.

T. = Transactions.
P. = Proceedings.
A., i. = Abstracts, vol. I.
A., ii. = Abstracts, vol. II.

o = ortho.
m = meta.
p = para.
n = normal.*
prim. = primary.
sec. = secondary.
tert. = tertiary.
vic. = vicinal.
ψ = pseudo

d = dextro.
l = laevo.
i = inactive.
r = racemic.
s = symmetrical.
as = unsymmetrical.
b.p. = boiling point.
m.p. = melting point.
N = attached to nitrogen.
O = attached to oxygen.
C = attached to carbon.
S = attached to sulphur.
ar. = aromatic.
ac. = alicyclic.

* Except in the term, *n*-rays.

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- cyno-, action of carbamide on compounds of** (FRERICHS and HARTWIG), 1906, A., i, 74, 163.
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- sodium derivative, action of ethylene dibromide on** (BARTHE), 1906, A., i, 175.
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- Acetoacetic acid**, brucine salt (HILDITCH), 1911, T., 234.
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- α -chloro-, ethyl ester, action of aromatic mercaptides on (FINGER and HEMMETER), 1909, A., i, 470.
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- Acetobenzylanilide**, *tri*-, *tetra*-, and *penta*-chloro-derivatives (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 408.
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- Acetomethylanilide** hydrochloride (DEHN), 1912, A., i, 834.
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- Acetophenone acetal** (ARBUSOFF), 1907, A., i, 749.
- Acetophenoneacetone**, semicarbazone of (FINZI), 1912, A., i, 995.
- Acetophenoneanil** (BUSCH and RINCK), 1905, A., i, 519.
- Acetophenoneanilide**, action of magnesium phenyl bromide on (PLANCHER and RAVENNA), 1907, A., i, 152.
- Acetophenone-*p*-anisidil** (REDDÉLIEN), 1912, A., i, 364.
- Acetophenoneazo-carbamide and -cyanide** (WOLFF, BOCK LORENTZ and TRAPPE), 1903, A., i, 205.
- Acetophenoneazothioformamide** (WOLFF and LINDENHAYN), 1904, A., i, 198.
- Acetophenonecarboxylic acid**, reaction of, with aniline (MEYER), 1908, A., i, 26.
- Acetophenonecarboxylic acid**, *p*-chloro-, and its nitrile (KUNCKELL), 1911, A., i, 991.
- Acetophenone-*o*-carboxylic acid**, amide and chloride of, and silver, and strontium salts (KARSLAKE and HUSTON), 1909, A., i, 302.
- Acetophenone-*o*-carboxylic acid**, ω -bromo-, and its reactions, and amide and its additive salts (GABRIEL), 1907, A., i, 1042.
- ω -mono- and *di*-bromo-, and their methyl esters (GABRIEL), 1907, A., i, 214.
- ω -nitro-, and its silver salt (GABRIEL), 1903, A., i, 345.
- Acetophenone-*p*-carboxylic acid** (*p*-acetylbenzoic acid), ethyl ester (BEREND and HERMS), 1906, A., i, 854.
- Acetophenonecyanophenylhydrazone** (ROLLA), 1907, A., i, 876.
- Acetophenoneoxalic acid**. See Benzoylpyruvic acid.
- Acetophenoneoxime**, velocity of transformation of, in acetanilide (DE BRUYN and SLUITER), 1904, A., ii, 473.
- Acetophenoneoxime**, *p*-nitro- (POSNER), 1912, A., i, 455.
- α -*p*-dinitro- (WIELAND), 1903, A., i, 767.
- Acetophenonephenylhydrazone**, *p*-amino- (WEIL), 1908, A., i, 983.
- Acetophenone-*m*- and -*p*-tolil** (REDDÉLIEN), 1912, A., i, 364.
- Acetophenylamidine**, trichloro-, and its additive salts (STEINKOPF), 1907, A., i, 488.
- and its hydrochloride (STEINKOPF, BOHRMANN, GRÜNUPF, KIRCHHOFF, JÜRGENS, and BENEDEK), 1910, A., i, 306.
- Acetophenylethylmethylamide** (JOHNSON and GUEST), 1910, A., i, 471.
- Acetophenylhydrazidine hydrochloride** (DIMROTH and MERZBACHER), 1910, A., i, 897.
- Acetopiperoneoxime** (POSNER), 1912, A., i, 456.
- Acetothienone**, action of hydrogen peroxide on (LANFRY), 1912, A., i, 717.
- Acetothiosulphuric acid**, sodium salt, rate of formation of (KRAPIWIN), 1912, A., ii, 926.
- Aceto-*o*-toluidide**, dibromo-, and dichloro- (VERDA) 1903, A., i, 21.

- Aceto-*o*-toluidide**, 3:5-*di*bromo-4-nitro-, and 3:5-*di*bromo-4:6-*dinitro*- (BLANKSMA), 1909, A., i, 780.
 5:6-*dichloro*-, and 6-chloro-5-bromo- (BADISCHE ANILIN- and SODA-FABRIK), 1910, A., i, 271.
di- and *tri*-chloro- and iodo- (BODROUX), 1905, A., i, 643.
 5-chloro-6-nitro- (BRAND and ZÖLLER), 1907, A., i, 756.
 5-iodo- (FICHTER and PHILIPP), 1907, A., i, 83.
 and its derivatives containing multivalent iodine (WILGERODT and HEUSNER), 1907, A., i, 1026.
 5-nitroso- (CAIN), 1909, T., 715; P., 123.
- Aceto-*m*-toluidide**, constitution of the products of nitration of, and their chloro-derivatives (COHEN and DAKIN), 1903, T., 331.
- Aceto-*m*-toluidide**, 2:4:6-*tri*bromo-, and 2:4:6-*tri*bromo-5-nitro- (BLANKSMA), 1909, A., i, 780.
 2-, 4-, and 6-chloro- (BAMBERGER and DE WERRA), 1903, A., i, 21; (BAMBERGER, TER-SARKISSJANZ, and DE WERRA), 1903, A., i, 25.
m-chloro- (KUNCKELL), 1911, A., i, 991.
 2-iodo- (WHEELER and LIDDLE), 1910, A., i, 18.
 2:5-*di*-iodo- (WHEELER and BRAUTLECHT), 1911, A., i, 27.
 2:6-*di*-iodo- (WHEELER and BRAUTLECHT), 1910, A., i, 663.
 5:6-*di*-iodo-, and 4:5:6-*tri*-iodo- (WHEELER and HOFFMAN), 1911, A., i, 28.
 6-nitroso- (CAIN), 1909, T., 715; P., 123.
- Aceto-*p*-toluidide**, 2-bromo- and 2-chloro- (BLANKSMA), 1909, A., i, 936.
*di*bromo- and *dichloro*- (VERDA), 1903, A., i, 21.
 3:5-*di*bromo-, and its nitro-derivatives (KUNCKELL), 1909, A., i, 20.
 2-chloro- (KUNCKELL and LILLIG), 1912, A., i, 1027.
 3-chloro-5-bromo- (ORTON and REED), 1907, T., 1570; P. 212.
 2-chloro-5-nitro- (BLANKSMA), 1911, A., i, 39.
 3-chloro-2-nitro- (BRAND and ZÖLLER), 1907, A., i, 756.
o-iodo-, chloride and 2-iodo- (WILGERODT and GARTNER), 1908, A., i, 876.
 3-iodo- (WHEELER and LIDDLE), 1910, A., i, 17.
- Aceto-*p*-toluidide**, 3:5-*di*-iodo- (WHEELER and LIDDLE), 1910, A., i, 18.
 3-iodo-5 (?) -nitro- (WHEELER and LIDDLE), 1910, A., i, 18.
 2-nitroso- (CAIN), 1909, T., 715; P., 123.
- Aceto-*o*- and *m*-toluidides**, iodo-derivatives (ARTMANN), 1905, A., i, 878.
- Aceto-*o*- and *p*-toluidides**, halogen derivatives (MANNINO and DONATO), 1908, A., i, 826.
- Acetotridecylanilide** (LE SUEUR), 1910, T., 2440.
- Acetovanillone** (*apocynin*), isolation and constitution of, and its derivatives (FINNEMORE), 1908, T., 1513; P. 171.
 isolation of, and its glucoside from *Apocynum androsaemifolium* (MOORE), 1909, T., 744; P., 85.
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- Acetoveratrone**, oxime, semicarbazone and pinacone of (MANNICH and NEUMANN), 1910, A., i, 412.
*di*bromide (HAHN), 1911, A., i, 649.
 oximino-derivative of, and amino-, hydrochloride of (PICTET and GAMS), 1909, A., i, 672.
- Acetoveratrone**, ω -amino-, hydrochloride, and ω -bromo- (MANNICH and HAHN), 1911, A., i, 649.
- Acetoxaluric acid**, potassium salts, (BEHREND and BEER), 1908, A., i, 840.
- Acetoxime**, influence of acids and alkalis on the velocity of formation of (BARRETT and LAPWORTH), 1907, P., 307; 1908, T., 85.
 behaviour of, towards sodium hypochlorite (PONZIO), 1906, A., i, 482.
- Acetoxy-**. See also under the parent Substance.
- Acetoxyacetic acid** (*acetylglucolic acid*) (NEF), 1908, A., i, 7.
 nitrate (DUVAL), 1903, A., i, 676; 1904, A., i, 137.
 amide, and chloride (ANSCHÜTZ and BERTRAM), 1903, A., i, 229.
 anilide and phenetidide of (ANSCHÜTZ and BERTRAM), 1904, A., i, 990.
- γ -Acetoxyacetoacetic acid**, α -cyano-, ethyl ester (ANSCHÜTZ), 1912, A., i, 836.
- p*-Acetoxyacetophenone**, ω -chloro- (TUTIN, CATON, and HANN), 1909, T., 2119.
- γ -Acetoxy- α -acetylbutyric acid**, methyl and ethyl esters (HALLER and MARCH), 1904, A., i, 712.

- Acetoxyacetyl-codeine** and ψ -codeine (KNORR, HÖRLEIN, and STAUBACH), 1909, A., i, 951.
- Acetoxyacetylmethylmorphimethine** and its methiodide (KNORR, HÖRLEIN, and STAUBACH), 1909, A., i, 952.
- α -**Acetoxyacrylonitrile** (DEAKIN and WILSMORE), 1910, T., 1969; P., 216.
- o*-, *m*-, and *p*-**Acetoxy- ψ -allyltoluene** (GUILLAUMIN), 1910, A., i, 477.
- 5-Acetoxy-1-*p*-aminophenyl-3:4-dimethylpyrazole**, acetyl derivative (FARBWERK VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 136.
- 10-Acetoxy-9-anthryldiphenylmethane** (PADOVA), 1909, A., i, 656.
- o*-**Acetoxyazobenzene**, *m*-amino-, acetyl derivative (HEWITT and RATCLIFFE), 1912, T., 1767.
- o*-**Acetoxybenzaldehyde**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 789.
- diacetate and 3-bromo- (HEINTSCHEL), 1905, A., i, 810.
- o*-**Acetoxybenzamide** (*acetylsalicylamide*), preparation of (KALLE & Co.), 1907, A., i, 320.
- 1-*p*-Acetoxybenzenazo-2-naphthol** (CHARRIER and FERRERI), 1912, A., i, 813.
- o*-**Acetoxybenzoic acid** (*acetylsalicylic acid*; *aspirin*), anhydride and chloride of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 984.
- anilide and phenetidine of (ANSCHÜTZ and BERTRAM), 1904, A., i, 990.
- oxime of (WIELAND), 1907, A., i, 493.
- peroxide (UHLFELDER), 1903, A., i, 174.
- brucine and cinchonine salts, and their optical activity (HILDITCH), 1908, T., 1391; P., 186.
- acetonechloroform ester (WOLFFENSTEIN), 1912, A., i, 556, 768.
- menthyl ester (KONTOR CHEMISCHER PRÄPARATE ERNST ALEXANDER), 1912, A., i, 556.
- o*-**Acetoxybenzoic acid**, bromo- and tri-bromo- (CHEMISCHE FABRIK VON HEYDEN), 1909, A., i, 798.
- dibromo- (v. HEMMELMAYR), 1912, A., i, 977.
- 5-chloro-, and its chloride (ANSCHÜTZ and NEFGEN), 1909, A., i, 666.
- 3:5-dichloro- (JOWETT and PYMAN), 1906, P., 317.
- ω -trichloro-, preparation of (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 37.
- o*-**Acetoxybenzoic acid**, ω -iodo- (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 485.
- 5-iodo- (HAASE), 1910, A., i, 740.
- p*-**Acetoxybenzoic acid** (RIEDEL), 1910, A., i, 765.
- o*-**Acetoxybenzoic anhydride** (EINHORN), 1910, A., i, 741; (EINHORN and SEUFFERT), 1911, A., i, 54.
- 2-Acetoxybenzonitrile**, 3-bromo- (MÜLLER), 1909, A., i, 938.
- 4-Acetoxybenzophenone**, 4'-nitro- (AUWERS), 1904, A., i, 67.
- 1-Acetoxy-*o*-benzoquinone-1-monoxide**, octachloro-1'-hydroxy- (JACKSON and MACLAURIN), 1907, A., i, 857.
- p*-**Acetoxybenzoyl chloride** (RIEDEL), 1910, A., i, 765.
- o*-**Acetoxybenzoylacetic acid**, α -cyano-, ethyl ester (ANSCHÜTZ), 1909, A., i, 661.
- o*-**Acetoxybenzoyl ethyl carbonate**. See under Carbonic acid.
- p*-**Acetoxybenzoylmorphine** and its methochloride (RIEDEL), 1910, A., i, 765.
- 2-*o*'-Acetoxybenzoyloxybenzoic acid** (*acetylsalicylosalicylic acid*) (BOEHRINGER & SÖHNE), 1910, A., i, 386; (EINHORN, HAAS, v. BAGH, LADISCH, and ROTHLAUF), 1911, A., i, 302.
- o*-**Acetoxybenzoylphenetidine** (*acetylsalicylphenetidine*) (ANSCHÜTZ), 1905, A., i, 267.
- m*-**Acetoxybenzoyltropeine** (CHININ-FABRIK BRAUNSCHWEIG; BUCHLER & Co.), 1904, A., i, 686.
- Acetoxybenzyldeoxybenzoin** (THIELE and RUGGELI), 1912, A., i, 867.
- Acetoxybenzylideneaniline** and its hydrochloride (KUHARA and TODO), 1911, A., i, 214.
- 1- α -Acetoxybenzyl-2-naphthol-3-carboxylic acid**, methyl ester of (FRIEDL), 1910, A., i, 742.
- β -**Acetoxy-sec.-butyl-tri- and -tetrabromophenyl acetate**, *p*- α -dibromo- (ZINCKE and GOLDEMANN), 1908, A., i, 781.
- α -**Acetoxyisobutyric acid** (ANSCHÜTZ and MOTSCHMANN), 1912, A., ii, 1047.
- α -chloro-, and its derivatives (BLAISE), 1912, A., i, 606.
- β -**Acetoxyisobutyric acid** and its derivatives (BLAISE and HERMAN), 1909, A., i, 633.
- α - and β -**Acetoxybutyric acids** (ANSCHÜTZ and MOTSCHMANN), A., ii, 1047.
- Acetoxycarboxylic acids**, hydrolytic fission of (RATH), 1908, A., ii, 94.

- Acetoxycarboxylic chlorides**, action of silver cyanide on (ANSCHÜTZ), 1909, A., i, 717.
- 6-*o*-Acetoxycinnamic acid** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 296.
- α -Acetoxycinnamic acid** (DIECKMANN), 1910, A., i, 384.
- 2-Acetoxycoumaran, 4:6-dibromo-** (FRIES and MOSKOPP), 1910, A., i, 332.
- 4-Acetoxycoumarin** (ANSCHÜTZ), 1903, A., i, 271; (ANSCHÜTZ, ANSPACH, FRESSENIUS, and CLAUS), 1909, A., i, 662.
- α -Acetoxystyrene** (BAGARD), 1907, A., i, 477.
- 2-Acetoxy-2':4'-diethoxy-5'-bromochalkone**, dibromide (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- 2-Acetoxy-2':4'-diethoxychalkone**, and 5-bromo-, dibromide (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- 7-Acetoxy-2-*op*-diethoxyphenyl-4-methylene-1:4-benzopyranol** (BÜLOW and SAUTERMEISTER), 1904, A., i, 262.
- α -Acetoxylhydroisosafole**, bromo-derivatives (HOERING), 1905, A., i, 903.
- β -bromonitro-** (HOERING), 1905, A., i, 902.
- Acetoxylhydroisosafoles**, α - and β -bromo-derivatives of (HOERING), 1907, A., i, 412.
- 4-Acetoxy-3:4-dimethoxyphenanthrene** (PSCHORR, DICKHÄUSER and D'AVIS), 1912, A., i, 720.
- 4-Acetoxy-3:6-dimethoxyphenanthrene-9-carboxylic acid** (PSCHORR, SEYDEL, and STÖHRER), 1908, A., i, 183.
- Acetoxylmethoxytriphenylcarbinyl ethyl ether** (HERZIG), 1908, A., i, 880.
- β -Acetoxy- α -dimethylpropionyl chloride**, anilide, and *p*-toluidide (BLAISE and HERMAN), 1909, A., i, 632.
- 6-Acetoxy-3:4-dimethyl- α -pyrone** (THOLE and THORPE), 1911, T., 2234.
- Acetoxylindole** and its benzoyl derivatives (HELLER and SÖLLING), 1909, A., i, 184.
- Acetoxylphenacyl** and its hydrolysis (PAAL and SCHULZE), 1903, A., i, 709.
- 2- and 4-Acetoxy-3:4-diphenyl-5-benzylidene- Δ^2 -cyclopentenone** (GRAY), 1909, T., 2137, 2145.
- 3-Acetoxy-4:5-diphenyl-2-*tert*-butyl-furan** (JAPP and MAITLAND), 1904, T., 1498.
- 4-Acetoxy-3:4-diphenyl-5:5-dimethyl- Δ^2 -cyclopentenone** and its oxime (GRAY), 1909, T., 2137, 2147.
- 1-Acetoxy-2:3-diphenylindene** (THIELE and RUGGLI), 1912, A., i, 867.
- α -Acetoxyethylacetonedicarboxylic acid**, methyl and ethyl esters (HALLER and MARCH), 1904, A., i, 713.
- α -Acetoxyethylbenzene**, β - β :3:5-tetra-bromo-2-hydroxy- (FRIES and MOSKOPP), 1910, A., i, 332.
- β -Acetoxy- γ -ethylhexan- δ -one** (BLAISE and MAIRE), 1909, A., i, 85.
- α -Acetoxy- β -ethylpentan- γ -one** (*ethyl acetoxyl-sec.-butyl ketone*) (BLAISE and MAIRE), 1909, A., i, 85.
- 1- β -Acetoxyethylthiolanthraquinone** (GATTERMANN), 1912, A., i, 1003.
- 9-Acetoxyfluorenes**, stereoisomeric (SCHMIDT and MEZGER), 1907, A., i, 43.
- α -Acetoxyheptic acid** (BAGARD), 1907, A., i, 385.
- 1-Acetoxy- γ -cyclohexyl methyl ketone**, oxime of (WALLACH and HAWORTH), 1912, A., i, 569.
- 1-Acetoxyhydrindene** (WEISSGERBER and BREHME), 1911, A., i, 624.
- 1-Acetoxyisatin** (HELLER), 1906, A., i, 586.
- β -Acetoxy-ketones**, constitution of the (BLAISE), 1908, A., i, 78.
- α -Acetoxy- γ -lauric acid** and its ethyl ester (GUÉRIN), 1904, A., i, 138.
- Aceto-*m*-xylidide**, *s*-2:4:6-*tribromo-* (BLANKSMA), 1909, A., i, 780.
- 3*:5:6-*tri-bromo-* and *-chloro-* (MANNINO and DONATO), 1908, A., i, 826.
- chloro-* and *-thiocyano-* (JOHNSON), 1903, A., i, 580.
- 5-chloro-* (ORTON and KING), 1911, T., 1188.
- 2*:5-*dinitro-* (BLANKSMA), 1909, A., i, 296.
- Acetoxymaleic acid anil** (WOHL and FREUND), 1907, A., i, 585.
- o*-Acetoxymercuri-anilinoacetic acid**, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDBACKER), 1911, A., i, 699.
- α -Acetoxymercuri-anilinopropionic acid**, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDBACKER), 1911, A., i, 699.
- α -Acetoxymercuri-*isobutoxy*- β -phenyl-propionic acid**, methyl ester, and derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), 1911, A., i, 595.
- α -Acetoxymercuri- β -ethoxy- β -phenyl-propionic acid**, methyl ester and derivatives of (SCHRAUTH, SCHOELLER, and STRUENSEE), 1910, A., i, 348; 1911, A., i, 595.

- α -Acetoxymercuri- β -methoxy- β -phenylpropionic acid**, its methyl ester, and halogen and veronal derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), 1910, A., i, 347.
- benzyl and ethyl esters (SCHRAUTH, SCHOELLER, and STRUENSEE), 1911, A., i, 595.
- α -Acetoxymercuri- β -propoxy- β -phenylpropionic acid**, methyl ester, and its derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), 1911, A., i, 595.
- α -Acetoxymercuri- β -isopropoxy- β -phenylpropionic acid**, methyl ester, and derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), 1911, A., i, 595.
- Acetoxymercuri-*o*-, -*m*-, and -*p*-toluidides** (SCHRAUTH and SCHOELLER), 1912, A., i, 931.
- Acetoxymercuritoluidinoacetic acid**, ethyl ester (SCHRAUTH and SCHOELLER), 1912, A., i, 931.
- 3-Acetoxy-4-methoxy-(α)-benzoyliminocinnamic anhydride** (MAUTHNER), 1910, A., i, 115.
- 4-Acetoxy-3-methoxycarbostryl**, *o*-nitro- (PSCHORR and POPOVICI), 1906, A., i, 851.
- 4-Acetoxy-3-methoxyphenanthraquinone**. See Acetylmethylmorpholquinone.
- 4-Acetoxy-3-methoxyphenanthrene-9-carboxylic acid** (PSCHORR and VOGTHERR), 1903, A., i, 184.
- 4-Acetoxy-5-methoxy- β -phenylpropionic acid**, 2-hydroxy-, lactone of (MOORE), 1911, T., 1048; P., 119.
- 5-Acetoxy-1-methylbenzoxazole** (HENRICH and WAGNER), 1903, A., i, 89.
- 3-Acetoxy-1-methylbrazan** (GRAFMAN and V. KOSTANECKI), 1909, A., i, 250.
- β -Acetoxy- α -methylbutyric acid**, derivatives of (BLAISE and HERMAN), 1910, A., i, 534.
- 6-Acetoxymethylcoumarin** and its bromo-derivatives (STOERMER and OETKER), 1904, A., i, 245.
- 4-Acetoxy-1-methylcyclohexyl methyl ketone**, oxime of (WALLACH), 1910, A., i, 569.
- 1-Acetoxy-1-methyl-2-hydrindone**, 3:3-dichloro-5-bromo- (FRIES and HEMPELMANN), 1909, A., i, 810.
- 1-Acetoxy-5-methyl-2-methyleneoumaran**, 1:4:6-tribromo- (FRIES and VOLK), 1910, A., i, 333.
- 4-Acetoxy-1-methylcyclopentane-2-carboxylic acid**, ethyl ester (HOPE and PERKIN), 1911, T., 771.
- β -Acetoxy- α -methylpropyl ethyl ketone** (BLAISE and HERMAN), 1910, A., i, 534.
- Acetoxymethylpyromucic acid** (FISCHER and ANDREAE), 1903, A., i, 678.
- Acetoxynaphthathioxin** (CHRISTOPHER and SMILES), 1912, T., 716.
- Acetoxynaphthaxanthone** (DUTTA and WATSON), 1912, T., 1244; P., 107.
- 9-Acetoxyphenanthrene** (SCHMIDT and SPOUN), 1910, A., i, 553.
- 10-Acetoxyphenanthrene**, 3:9-dibromo-, and 3:9-dinitro- (SCHMIDT and SPOUN), 1910, A., i, 553.
- β -Acetoxy- β -phenylacrylic acid**, α -cyano-, methyl ester (SCHMITT), 1903, A., i, 398.
- η -Acetoxy- α -phenyl- η -*p*-anisyl- $\Delta^{\alpha\gamma}$ -heptadien- ϵ -one**, ζ -bromo- (BAUER and DIETERLE), 1911, A., i, 882.
- p*-Acetoxyphenylarsinic acid** and its sodium salt (BARROWCLIFF, PYMAN, and REMFRY), 1908, T., 1895.
- γ -Acetoxy- γ -phenylbutyric acid**, β -nitro-, methyl ester (WIELAND), 1904, A., i, 55.
- 4'-Acetoxyphenyl-2-chloro-4:6-dinitro-3-tolylamine** (REVERDIN, DRESEL, and DELÉTRA), 1904, A., i, 580.
- 6-Acetoxy-11-phenyldihydronaphthacenequinone**, 6:11:(γ)-trihydroxy-, and its tetra-acetyl derivative (VOSWINCKEL), 1909, A., i, 166.
- 3-Acetoxy-2-phenyl-4:5-diphenylene-furan** (JAPP and WOOD), 1904, P., 221; 1905, T., 712.
- 9-*p*-Acetoxyphenylfluorene** (BISTRZYCKI and V. WEBER), 1910, A., i, 743.
- 3-Acetoxy-9-phenylfluorone** (POPE and HOWARD), 1910, T., 1027.
- o*-Acetoxyphenylglyoxylic acid** and its methyl ester, silver and sodium salts, amide and nitrile (ANSCHÜTZ and CLAUS), 1909, A., i, 717.
- 9-Acetoxy-9-phenyl-10-methylenedihydroanthracene** (GUYOT and STAHLING), 1906, A., i, 18.
- 3-Acetoxyphenyl-2-methylnaphthaphenazonium salts** (KEHRMANN and STERN), 1908, A., i, 221.
- Acetoxyphenylnaphthaphenazonium chlorides**, 3- and 6- (KEHRMANN and STERN), 1908, A., i, 220.
- 3-Acetoxy-10-phenylphenazonium chloride**, 1-amino-, and its acetyl derivative (KEHRMANN and MASSLENIKOFF), 1912, A., i, 1034.
- β -Acetoxy- β -phenylpivalyl chloride** and toluidide (BLAISE and HERMAN), 1911, A., i, 881.

- α -Acetoxy- β -phenylpropionic acid** (ANSCHÜTZ and MOTSCHMANN), 1912, A., ii, 1047.
- Acetoxyphenylpyruvonitrile** (ANSCHÜTZ and BÖCKER), 1909, A., i, 717.
- α -Acetoxyphenylthiolacetic acid, ethyl ester** (PUMMERER), 1910, A., i, 468.
- 3-Acetoxy-9-phenylxanthonium chloride** (POPE and HOWARD), 1911, T., 549.
- p*-Acetoxy- ω -phthaliminoacetophenone** (TUTIN, CATON, and HANN), 1909, T., 2119.
- α -Acetoxypropionic acid** (*acetyl-lactic acid*) (AUGER), 1905, A., i, 320. and chloride (ANSCHÜTZ and BERTRAM), 1903, A., i, 229.
- Acetoxypropionitrile** (*acetyl-lactonitrile*) (ANSCHÜTZ), 1905, A., i, 267.
- α -Acetoxypropylbenzene, β -bromo-** (HOERING), 1905, A., i, 903.
- γ -Acetoxypropylphthaliminomalononic acid, ethyl ester** (SÖRENSEN), 1905, A., i, 749.
- 2-Acetoxy stilbene and its dibromide** (v. KOSTANECKI and TAMBOR), 1909, A., i, 225.
- p*-Acetoxy styrene, ω -nitro-** (REMFY), 1911, T., 286; P., 21.
- 4-Acetoxy sulphotritanic acid, 2-hydroxy-, ammonium salt** (v. LIEBIG and HERB), 1908, A., i, 450.
- 8-Acetoxyterpan-2-one-6-ylacetoacetic acid, ethyl ester** (RABE and WEILINGER), 1904, A., i, 509.
- p*-Acetoxytetraphenylmethane** (BISTRZYCKI and GYR), 1904, A., i, 315.
- 4-Acetoxy-*m*-toluic acid and its chloride** (ANSCHÜTZ and SIEBEN), 1909, A., i, 665.
- 3-Acetoxy-*p*-toluic acid and its chloride** (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 663.
- 2-Acetoxy-*m*-toluoyl chloride** (ANSCHÜTZ and SCHOLL), 1911, A., i, 316.
- 2-Acetoxytolyl-5-arsinic acid and its sodium salt** (BARROWCLIFF, PYMAN, and REMFY), 1908, T., 1896.
- 2'-Acetoxy-3:4:4'-trimethoxychalcone and its dibromide** (BLOM and TAMBOR), 1905, A., i, 916.
- Acetyl-**. See also Acet-, Aceto-, Acetoxy-, and under the parent Substance.
- Acetyl group, replacement of the, by the methoxyl group, by the action of diazomethane** (HERZIG and TICHATSCHKE), 1906, A., i, 173. replacement of the, by the methyl group by means of diazomethane (HERZIG and TICHATSCHKE), 1906, A., i, 431.
- Acetyl groups, estimation of** (PERKIN), 1904, P., 171; 1905, T., 107; (SUDBOROUGH and THOMAS), 1905, T., 1752, P., 88; (MEYER and HARTMANN), 1906, A., ii, 58.
- haloids, action of, on unsaturated hydrocarbons, in the presence of aluminium haloids (KRAPIWIN), 1910, A., i, 349.
- Acetyl chloride, preparation of** (WOHL), 1904, A., i, 795.
- pyrogenic behaviour of (JOIST and LÖB), 1906, A., i, 130.
- compounds of, with magnesium bromide and iodide (MENSCHUTKIN), 1907, A., i, 395.
- action of, on acetylbiuret (OSTROGOVICH), 1911, A., i, 1036.
- condensation of, with salicylamide (TITHERLEY and HICKS), 1911, T., 866; P., 102.
- action of, on selenic acid (LAMB), 1903, A., i, 732.
- as reagent for distinguishing between enolic and ketonic modifications (MICHAEL and MURPHY), 1908, A., i, 949.
- as a reagent for pinacolyl alcohols (HENRY), 1906, A., i, 329; (DELACRE), 1906, A., i, 551.
- chlolo-, preparation of (CONSORTIUM FÜR ELECTROCHEMISCHE INDUSTRIE), 1910, A., i, 650.
- difluorochloro-, and its polymeride (SWARTS), 1907, A., i, 669.
- iodo- (ABDERHALDEN and GUGGENHEIM), 1908, A., i, 886.
- Acetyl fluoride, dibromo-** (SWARTS), 1911, A., i, 762.
- Acetyl hydrogen peroxide, preparation of** (PARKE, DAVIS & Co.), 1905, A., i, 317.
- Acetyl nitrate** (PICTET and KHOTINSKY), 1907, A., i, 175.
- Acetyl peroxide and its hydrolysis** (CLOVER and RICHMOND), 1903, A., i, 396.
- Acetyl thiocyanate, tautomerism of** (DIXON and HAWTHORNE), 1905, T., 468; P., 121.
- influence of temperature on the interaction of, with bases (DORAN and DIXON), 1905, T., 331; P., 77.
- 4-Acetylacenaphthene and its pierate and oxime** (GRAEBE and HAAS), 1903, A., i, 409.
- Acetylacetone, ultra-violet absorption spectra of** (BALY and DESCH), 1904, T., 1029; P., 157.
- enolic forms of (KNORR and FISCHER), 1911, A., i, 977.

- Acetylacetone**, condensation of, with aldehydes (KNOEVENAGEL, BIALON, RUSCHHAUPT, SCHNEIDER, CRONER, and SÄNGER), 1903, A., i, 637.
- condensation of, with *o*- and *p*-nitrobenzoyl chlorides (MECH), 1907, A., i, 63.
- condensation of, with *o*- and *p*-nitrobenzyl chlorides (MECH), 1908, A., i, 655.
- action of carbamide on (DE HAAN), 1908, A., i, 577.
- compounds of, with metallic chlorides (ROSENHEIM, LOEWENSTAMM, and SINGER), 1903, A., i, 603.
- behaviour of chloroform with (KÖTZ and ZÖRNIG), 1907, A., i, 111.
- action of cyanogen on (TRAUBE and BRAUMANN), 1904, A., i, 710.
- condensation of, with methylpyrazolone (WOLFF), 1905, A., i, 840.
- action of methyl and ethyl chlorooxalates on (TRIMBACH), 1905, A., i, 565.
- compound of, with molybdic acid (ROSENHEIM and BERTHEIM), 1903, A., ii, 374.
- alkaline-earth and cadmium, mercuric and zinc derivatives (TANATAR and KUROVSKI), 1908, A., i, 502.
- rare earth derivatives (BILTZ), 1904, A., i, 714.
- metallic derivatives, and their compounds with bases (BILTZ and CLINCH), 1904, A., i, 715.
- sodium derivative, action of epichlorohydrin on (HALLER and BLANC), 1904, A., i, 180.
- action of phenylpropionyl chloride on (RUHEMANN and MERRIMAN), 1905, T., 1390; P., 224.
- thulium salt (JAMES), 1911, A., ii, 892.
- zinc and cadmium salts of (ROSENHEIM and GARFUNKEL), 1911, A., i, 620.
- peroxide (PASTUREAU), 1909, A., i, 208.
- Acetylacetone-*p*-anisidide** (KOENIGS and MENGEL), 1904, A., i, 528.
- Acetylacetonearabinamine** (ROUX), 1903, A., i, 463.
- Acetylacetonebenzyl-*o*-carboxylic acid**, and its condensation products (BÜLOW and DESENISS), 1907, A., i, 252.
- Acetylacetonebenzylidenecetoacetic acid**, ethyl ester (KNOEVENAGEL), 1903, A., i, 638.
- Acetylacetonecarbamide**. See 4:6-Dimethyl-2-pyrimidone.
- Acetylacetonedioxime** from sorbic acid (FEIST), 1904, A., i, 852.
- Acetylacetonedioxime**, electrolytic reduction of (TAFEL and PFEFFERMANN), 1903, A., i, 287.
- Acetylacetoneglucamine** (ROUX), 1904, A., i, 230.
- Acetylacetone-*m*-hydroxyanilide** (BÜLOW and ISSLER), 1904, A., i, 191.
- Acetylacetone-methylaminobenzylidenecetoacetic acid**. See α -Diacetyl- δ -methylamino- β -phenyl- Δ -hexenoic acid.
- Acetylacetonephenylmethylhydrazine** (V. BRAUN), 1910, A., i, 524.
- Acetylacetonesemicarbazone**, 3-isonitroso- (SACHS and ALSLEBEN), 1907, A., i, 357.
- Acetylacetonyloxalic acid**, methyl ester (TRIMBACH), 1905, A., i, 565.
- 4-Acetyl-3-*o*- and -*p*-acetoxyphenyldihydro-2:4-benzoxazine-1-one** (EKELEY and DEAN), 1912, A., i, 212.
- Acetylaceturylhydrazide**. See Glycine hydrazide, diacetyl derivative.
- Acetylacetylacetoneamine**, α -chloro- (BENARY), 1909, A., i, 890.
- α -**Acetylisoaconitic acid**, ethyl ester, anilide of (SIMONSEN), 1908, T., 1031.
- β -**Acetyl adipic acid**, preparation of, and its ethyl ester, silver salt, and semicarbazone (SIMONSEN), 1907, T., 188.
- Acetylalanine** and chloro-derivative of its ester (FISCHER and OTTO), 1903, A., i, 608.
- chloro- (FISCHER), 1904, A., i, 652.
- γ -**Acetylalanine**, behaviour of, towards dehydrating agents (ZINCKE), 1910, A., i, 557.
- Acetyl-*d*-alanine**, chloro- (FISCHER and SCHULZE), 1907, A., i, 295.
- Acetyl-*d*-alanylglycine**, chloro-, and its chloride (FISCHER), 1908, A., i, 325.
- Acetyl-*d*-alanylglycylglycine**, chloro-, and its ester (FISCHER), 1908, A., i, 325.
- Acetyl-*d*-alanylglycyl-*l*-tyrosine**, chloro-, and its methyl ester (FISCHER), 1908, A., i, 325.
- Acetyl-*d*-alanyl-*l*-leucine**, chloro- (ABDERHALDEN and FODOR), 1912, A., i, 951.
- Acetyl-*d*-alanyl-1-leucyl-*d*-isoleucine**, chloro- (ABDERHALDEN and HIRSCH), 1910, A., i, 720.
- Acetyl-*d*-alanyl-*l*-tyrosine**, chloro- (ABDERHALDEN and HIRSZOWSKI), 1908, A., i, 888.
- Acetylalkylthiomalonamic acids**, imino-, ethyl esters (BEHREND and HENNICKE), 1906, A., i, 312.

- Acetylallanturic acid** and its phenylhydrazone and reactions (BEHREND and BEER), 1908, A., i, 841.
- Acetylamino-** See under the parent Substance.
- Acetylanhydromethylbaptigenetin** (GORTER), 1908, A., i, 98.
- Acetylanhydropurpurogallonecarboxylic acid** (A. G. and F. M. PERKIN), 1908, T., 1192; P., 149.
- Acetyl- α -anhydrotetramethylhæmatoxylone, nitro-** (PERKIN and ROBINSON), 1909, T., 398.
- Acetyl- α - and β -anhydrotrimethylbrazilone, nitro-** (PERKIN and ROBINSON), 1909, T., 393, 397.
- Acetylaniline-*o*-sulphonic acid, 4-bromo-**, and its derivatives (CLAASZ), 1911, A., i, 436.
- Acetylaniline-*m*-sulphonic acid** (*acetylmelanilic acid*), *p*-nitro- (KALLE & Co.), 1904, A., i, 664, 870.
- Acetylaniline-*p*-sulphonic acid**, amides of (GELMO), 1908, A., i, 409.
- 1-Acetylanilinobenzoxazole** (YOUNG and DUNSTAN), 1908, T., 1055; P., 136.
- 3-*p*-Acetylanilo-5-phenyl-1-*p*-acetylphenyl-2-pyrrolidone** (BORSCHÉ), 1909, A., i, 53.
- p*-Acetylanisole.** See *p*-Methoxyacetophenone.
- Acetyl-*p*-anisoyl.** See *p*-Methoxyphenyl methyl diketone.
- Acetylanthranil** (ANSCHÜTZ and SCHMIDT), 1903, A., i, 57; (MAYER), 1911, A., i, 869.
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action of anthranilic acid on (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 57.
- Acetylanthranil, 4- and 5-amino-, acetyl derivatives** (BOGERT, AMEND, and CHAMBERS), 1910, A., i, 894.
5-bromo- (BOGERT and HAND), 1906, A., i, 176.
3:5-*di*bromo- (WHEELER and OATES), 1910, A., i, 481.
4-nitro-, preparation of, and condensation of, with primary amines (BOGERT and STEINER), 1905, A., i, 945; (BOGERT and KLABER), 1908, A., i, 466.
5-nitro- (BOGERT and COOK), 1906, A., i, 988.
6-nitro-, and its reactions (BOGERT and CHAMBERS), 1905, A., i, 612.
preparation of, and condensation of, with primary amines (BOGERT and CHAMBERS), 1905, A., i, 612; (BOGERT and SEIL), 1905, A., i, 945.
- Acetylanthranilcarboxylic acid**, methyl ester (WEGSCHEIDER and FALTIS), 1912, A., i, 463.
- Acetylanthranil-4-carboxylic acid** (BOGERT, WIGGIN, and SINCLAIR), 1907, A., i, 351.
- Acetylanthranil-5-carboxylic acid** (BOGERT, WIGGIN, and SINCLAIR), 1907, A., i, 351.
4-nitro- (BOGERT and KROPFF), 1909, A., i, 584.
- Acetylanthranilic acid**, action of phosphorus oxychloride on (ANSCHÜTZ and SCHMIDT), 1903, A., i, 56.
brucine and cinchonine salts and their optical activity (HILDITCH), 1908, T., 1391; P., 186.
lactone of (MOHR and KÖHLER), 1910, A., i, 116.
- Acetylanthranilic acid, bromo-** (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 318.
3:5-*di*bromo-, and its silver salt and ethyl ester (WHEELER and OATES), 1910, A., i, 481.
3-chloro-, methyl ester (FREUNDLER), 1907, A., i, 158.
 ω -chloro- (v. PAWLEWSKI), 1905, A., i, 437.
dichloro-, and its salts, ethyl ester, and lactone (GÄRTNER), 1905, A., i, 130.
4-nitro-, synthesis of 7-nitro-4-keto-2-alkyldihydroquinazolines from (BOGERT and STEINER), 1905, A., i, 945.
- Acetylanthranilimine, *dichloro-*.** See 4-Keto-2-*dichloromethyl*dihydroquinazoline.
- Acetylanthranoylanthranilic acid.** See Benzoylanthranilic acid, amino-, acetyl derivative.
- Acetylanthranylacetylhydrazide** (BOGERT, BELL, and AMEND), 1911, A., i, 162.
- Acetylanthranyl-*m*-aminotoluidide** (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.
- 4-Acetyl-1- β -anthraqunonyl-3-methylpyrazolone** (MÖHLAU, VIERTTEL, and REINER), 1912, A., i, 705.
- Acetylarlythiomalonamic acids**, imino-, ethyl esters (BEHREND and HENNICKE), 1906, A., i, 312.
- Acetyl-*l*-asparaginyll chloride**, chloro- (FISCHER and KOENIGS), 1907, A., i, 487.
- Acetyl-*l*-asparaginyll-*l*-leucine**, chloro-, and its ethyl ester (FISCHER and KOENIGS), 1907, A., i, 487.
- Acetyl-*l*-aspartic acid, chloro-** (FISCHER and FIEDLER), 1910, A., i, 656.

- Acetylaspartyldiglycine**, chloro-, and its ethyl ester (FISCHER and FIEDLER), 1910, A., i, 657.
- Acetylation** (LAW), 1908, A., i, 321. velocity of. See Velocity. with acetic anhydride and sulphuric acid (STILLICH), 1905, A., i, 318; (BLANKSMA), 1909, A., i, 779. in aqueous solutions (A. and L. LUMIERE and BARBIER), 1905, A., i, 642. in ether solution (DEHN), 1912, A., i, 833. of some unsaturated amines (POTOZKY), 1908, A., i, 795. acids as accelerators in (SMITH and ORTON), 1909, T., 1060; P., 166. of amino-groups, acids as accelerators in the (SMITH and ORTON), 1908, T., 1242; P., 132. of some amino-derivatives of the naphthalene and quinoline groups (CYBULSKY), 1903, A., i, 775.
- Acetylauramine** and its derivatives (SEMPER), 1911, A., i, 579.
- Acetylbarbatic acid** (HESSE), 1903, A., i, 703.
- Acetylbenzanilide**, hydroxy- (MUMM and HESSE), 1910, A., i, 311.
- Acetylbenzene**. See Acetophenone.
- O-Acetyl-3-benzenehydrazo-5-bromo-p-cresol** (AUWERS, HIRT, and V. DER HEYDEN), 1909, A., i, 438.
- O-Acetylbenzenehydrazo-o- and -m-4-xyleneol** (AUWERS, HIRT, and V. DER HEYDEN), 1909, A., i, 438.
- Acetylbenzo-p-nitroanilide** (MUMM and HESSE), 1910, A., i, 311.
- Acetylbenzoic acids**. See Acetophenone-carboxylic acids.
- Acetylbenzoin**, *p*-nitro- (FRANCIS and KEANE), 1911, T., 346; P., 44.
- Acetyl-l-benzoin** (WREN), 1909, T., 1583.
- 3-Acetylbenzotetronic acid**, 6:8-dibromo-. See 3-Acetylcoumarin, 6:8-dibromo-4-hydroxy-.
- 2-Acetylbenzisooxazole**, 5-nitro- (BORSCHKE and OPPENHEIMER), 1912, A., i, 652.
- 2-Acetylbenzisooxazolone** (BAMBERGER and PYMAN), 1909, A., i, 574.
- Acetylbenzoyl**. See Phenyl methyl diketone.
- Acetylbenzoyl-**. See Benzoylacetyl-.
- Acetylbenzyl cyanide**. See Acetylphenylacetoneitrile.
- 1-Acetyl-4-benzylidenehydantoin**, 2-thio- (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1032.
- 3-Acetyl-5-benzylidene-2-methyl-4-ketodihydrofuran**. See 4-Keto-3-acetyl-5-benzylidene-2-methylidihydrofuran.
- Acetylbenzylmalonanilic acid**, ethyl ester (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 136.
- 2-Acetyl-1-benzyl-2-methylpyrrolidone** and its oxime (KÜHLING and FRANK), 1909, A., i, 955.
- Acetylbiuret**, action of acetyl chloride on (OSTROGOVICH), 1911, A., i, 1036.
- Acetylborneolcarboxylic acid anhydride** (BREDT and SANDKUHL), 1909, A., i, 499.
- Acetylbornyl-p-phenylenediamine** (ULLMANN and SCHMIDT), 1911, A., i, 71.
- 1-Acetyl-1-bromoacetyl-6-methyltetrahydroquinoline** (KUNCKELL and VOLHASE), 1909, A., i, 835; (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-1-bromoacetyl-8-methyltetrahydroquinoline** (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-6-bromoacetyltetrahydroquinoline** (KUNCKELL and VOLHASE), 1909, A., i, 835; (KUNCKELL), 1910, A., i, 636.
- α -N-Acetyldibromo-o-hydroxybenzylphenylhydrazine**, *o*-propionate of (AUWERS, HIRT, and MÜLLER), 1909, A., i, 224.
- β -Acetylbutane- $\alpha\beta$ -tricarboxylic acid**, ethyl ester, preparation of (SIMONSEN), 1907, T., 188.
- Acetylbutyric acid**, β -hydroxy- (DUPONT), 1912, A., i, 483.
- γ -Acetylbutyric acid** and its hydrate (KAY and PERKIN), 1905, T., 1074. and its semicarbazone and hydrate (HAWORTH and PERKIN), 1908, T., 588.
- 5-Acetylallocaffuric acid** (BILTZ), 1910, A., i, 523.
- Acetylcampholic acid**, methyl ester, and its semicarbazone (HALLER and WEIMANN), 1907, A., i, 278.
- Acetylcamphor** (MALMGREN), 1903, A., i, 711. new formation of, and its imine (FORSTER and JUDD), 1905, T., 368; P., 116.
- Acetylcamphorcarboxylic acid**, methyl and amyl esters (BRÜHL), 1903, A., i, 64.
- d*- α -Acetylcamphor-*m*-hydroxyanil** (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEFER), 1910, A., i, 882.
- Acetylcarbamic acid**, esters (BILLETTER), 1903, A., i, 800. allyl ester and halogen-substituted propyl and isopropyl esters (JOHNSON and GUEST), 1910, A., i, 886.

- Acetylcabamide**, preparation of (OFFE), 1907, A., i, 645.
- Acetylcabamide**, dichloro- (BORN-WATER), 1911, A., i, 617.
- cyano-, and its alkyl derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 195.
- oximinocyno- (MERCK), 1911, A., i, 167.
- and its sodium derivative (CONRAD and SCHULZE), 1909, A., i, 212.
- Acetylcabimide** (BILLETER), 1903, A., i, 800.
- Acetylcabitol** (*acetol*, *hydroxyacetone*), preparation and reactions of (NEF), 1905, A., i, 5; (PASTUREAU), 1905, A., i, 572.
- aqueous solutions of (KLING), 1905, A., i, 625.
- action of alkalis on aqueous solutions of (KLING), 1905, A., i, 503.
- and its acyl derivatives, action of organo-magnesium compounds on (KLING), 1904, A., i, 2, 133.
- oxidation of (KLING), 1905, A., i, 3.
- and its reduction products (KLING), 1903, A., i, 223.
- reduction of (KLING), 1903, A., i, 138.
- hydrates of (KLING), 1905, A., i, 402.
- acetate of, and its oxime and semicarbazone (NEF), 1905, A., i, 6.
- esters of (KLING), 1905, A., i, 732.
- methyl ether (HENRY; KLING), 1904, A., i, 474.
- methyl and ethyl ethers of, and their hydrazones (LEONARDI and DE FRANCHIS), 1903, A., i, 787.
- p*-bromo- and *p*-nitrophenylhydrazones of, and their acetyl derivatives (PALAZZO and CALDARELLA), 1905, A., i, 937.
- Acetylcabitol**, chloro- (SMIRNOFF), 1904, A., i, 214.
- Acetylcabitolsemicarbazone** (NEF), 1905, A., i, 4.
- Acetylcatechol** (3:4-*dihydroxyphenyl methyl ketone*), amino-, and its hydrochloride (STOLZ and MEYER), 1905, A., i, 106; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 127.
- preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 262.
- reduction of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 436.
- ω -chloro-, reaction of, with amines (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 873.
- Acetylcatechol** (3:4-*dihydroxyphenyl methyl ketone*), ω -chloro-, and ω -iodo-, diacetates (MANNICH and HAHN), 1911, A., i, 649.
- ω -nitro-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 655.
- Acetylcelluloses** (HAEUSSERMANN), 1905, A., i, 574.
- Acetyl-di- and -tri-chloroacetamide**, chloro- (KÖNIG), 1904, A., i, 296.
- 1-Acetyl-1-chloroacetyl-6-methyltetrahydroquinoline** (KUNCKELL), 1910, A., i, 636; (KUNCKELL and VOLLHASE), 1909, A., i, 835.
- 1-Acetyl-1-chloroacetyl-8-methyltetrahydroquinoline** (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-6-chloroacetyltetrahydroquinoline** (KUNCKELL and VOLLHASE), 1909, A., i, 835; (KUNCKELL), 1910, A., i, 636.
- Acetylchloroaminobenzene**, *p*-iodo- and *p*-iodoxy- (WILLGERODT and HEUSNER), 1907, A., i, 1026.
- Acetylchloroamino-2:4-dichlorobenzene**, preparation of (REED and ORTON), 1907, T., 1554.
- action of, on phenylhydrazine (CHATTAWAY), 1909, T., 1071.
- Acetylchloroamino-2:6-dichloro-4-bromobenzene** (REED and ORTON), 1907, T., 1550; P., 210.
- o*-Acetylchloroaminotoluene, iodo- and iodoxy- (WILLGERODT and HEUSNER), 1907, A., i, 1026.
- 1-Acetyl-1-chlorobromoacetyl-6-methyltetrahydroquinoline** (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-6-chlorobromoacetyltetrahydroquinoline** (KUNCKELL), 1910, A., i, 636.
- Acetylchlorocarbamide** (CHATTAWAY and WÜNSCH), 1909, T., 129.
- Acetylchloroxylose** (RYAN and EBRILL), 1908, A., i, 716.
- Acetylchromic acid** (PICTET), 1903, A., i, 456; (PICTET and GENEQUAND), 1903, A., i, 601.
- α - and β -Acetylcincholeuonic acids and anhydrides (WOHL and MAAO), 1909, A., i, 254.
- Acetylcitric acid**, *s*-dimethyl ester and its amide and nitrile, and monomethyl ester, and its anhydride (SCHROETER and SCHMITZ), 1905, A., i, 738.
- Acetylcodeine** and its oxime and methiodide (KNORR, HÖRLEIN, and STAUBACH), 1909, A., i, 952.
- Acetylcotarnine** and its oxime (AHLERS), 1905, A., i, 786.

- 3-Acetylcoumarin**, 7-bromo-, and its oxime (LINCH), 1912, T., 1763; P., 231.
- 6:8-*di*bromo-4-hydroxy-, and its ammonium salt (ANSCHÜTZ and LÖWENBERG), 1909, A., i, 731.
- 4-hydroxy-, and its metallic salts (ANSCHÜTZ, ANSPACH, FRESSENIUS, and CLAUS), 1909, A., i, 662.
- 6:8-*di*-iodo-4-hydroxy-, and its ethyl ether, and metallic salts (ANSCHÜTZ and SCHMITZ), 1909, A., i, 731.
- 1-Acetylcoumarone** and its *di*bromo-derivative (STOERMER and SCHÄFFER), 1903, A., i, 846.
- Acetyl-*p*-cresol**, 3-chloro-, benzoate (AUWERS and MÜLLER), 1909, A., i, 223.
- anisoyl derivative of (AUWERS), 1910, A., i, 630.
- Acetyl-*m*-cresols**, 4- and 6-, and their methyl and ethyl ethers, and the oximes of the 4-compound (EYKMAN), 1904, A., i, 664.
- Acetylcresotic acid**. See Acetoxystoluic acid.
- α -**Acetylcrotonic acid**, β -amino-, and β -amino- α -chloro-, ethyl esters (BENARY), 1909, A., i, 889.
- s*-Acetyl-*l*-cumylhydrazide** (WILLGERODT and HERZOG), 1905, A., i, 550.
- Acetylcyanamide**, cyano- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 800.
- Acetyl-*l*-cystine**, chloro- (FISCHER and GERNGROSS), 1909, A., i, 367.
- Acetyldextrin**, *dichloro*- (KLDIASCHWILI), 1905, A., i, 634.
- Acetyl-1:2-dialkylxybenzenes**, 4-amino-, *N*-benzoyl derivatives, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1049.
- Acetyldianthranilide** (SCHROETER and EISLEB), 1909, A., i, 579.
- β -Acetyldi-benzoin and -butyrin** (GUTH), 1903, A., i, 227.
- Acetyldiglucoamine** (OFFER), 1908, A., i, 99.
- Acetyldiglycinimide**, chloro- (BERGELL and FEIGL), 1908, A., i, 140.
- Acetyldiglycylglycine** (*acetyldiglycyl-aminoacetic acid*), amino-, hydroxy-, and *di*-iodo-, ethyl esters, and the hydrazide of the amino- and azoimide of the hydroxy-compounds (CURTIUS), 1904, A., i, 477.
- chloro- (FISCHER), 1904, A., i, 653.
- 2-Acetyl-1:3-dihydroisoindole** (TIFFENEAU), 1911, A., i, 810.
- Acetyldihydro- $\alpha\beta$ -naphthazine** (FISCHER and STRAUS), 1908, A., i, 222.
- 13-Acetyl-5:13-dihydroquindoline** and 5:10-*di*bromo-, (FICHTER and ROHNER), 1911, A., i, 86.
- Acetyldiketo-**. See Diketoacetyl-.
- 2-Acetyl-5:6-dimethoxyphenoxyacetic acid** (v. GRAFFENRIED and v. KOSTANECKI), 1910, A., i, 631.
- C*-Acetyldimethylallanturic acid** (BEHREND and FRICKE), 1903, A., i, 740.
- β -Acetyl- $\alpha\alpha$ -dimethylisoallitric acid** (SIEMONSEN), 1904, A., i, 952.
- Acetyldimethylcarbamide**, cyano-, and its reactions (BAUM), 1908, A., i, 253, 292.
- Acetyldimethylcarbinol**, benzyl and methyl ethers (DIELS and TER MEER), 1909, A., i, 455.
- C*-Acetyldimethyldihydroresorcin** and its derivatives (CROSSLEY and RENOUE), 1912, T., 1529; P., 223.
- 4-Acetyl-1:1-dimethyl-3-cyclohexanone**, and its semicarbazone (LÉSER), 1910, A., i, 48.
- 6-Acetyl-1:5-dimethylcyclohexan-3-one-2:6-dicarboxylic acid**, diethyl ester (RUHEMANN), 1909, T., 115.
- ϵ -Acetyl- $\beta\beta$ -dimethyl-*n*-hexoic acid** and its oxime (LÉSER), 1912, A., i, 779.
- ϵ -Acetyl- $\delta\delta$ -dimethyl-*n*-hexoic acid**, ethyl ester (LÉSER), 1912, A., i, 778.
- Acetyldimethylketol**. See Acetylmethylcarbinyl acetate.
- 5-Acetyl-1:4-dimethylpyrazole-3-carboxylic acid**, and its ethyl ester (KLAGES and RÖNNEBURG), 1903, A., i, 529.
- 3-Acetyl-2:4-dimethylpyrrole**, hydrazone of (KNORR and HESS), 1911, A., i, 1020.
- 1-Acetyl-2:3-dimethylpyrrole-4-carboxylic acid**, ethyl ester (PILOTY and WILKE), 1912, A., i, 899.
- δ -Acetyl- $\alpha\alpha$ -dimethyl-*n*-valeric acid** and its ethyl ester, oxime and semicarbazone (RUPE and LIECHTENHAN), 1908, A., i, 390.
- β -Acetyl- $\alpha\beta$ -diphenyl- α -ethyloxidoethane** and its semicarbazone (JAPP and MICHIE), 1903, T., 297.
- 6-Acetyl-1:5-diphenylcyclohexan-3-one-2:6-dicarboxylic acid**, diethyl ester, and its sodium and *di*bromo-derivatives (RUHEMANN), 1909, T., 112.
- 2-Acetyl-1:3-diphenyl-5-cyclohexenone-4-carboxylic acid**, ethyl ester (KNOVENAGEL and ERLER), 1903, A., i, 637.
- Acetyldiphenylmethane** and its oxime, and amino-, and nitro- (DUVAL), 1903, A., i, 277.

***α*-Acetyldiphenylmethane, 2:4:2':4'-tetranitro-** (BORSCHÉ), 1909, A., i, 385.

***γ*-Acetyl-*βγ*-diphenyl-*α*-methyl-*βγ*-oxidobutyric acid** and its oxime, and their silver salts, its lactone, and the action of phenylhydrazine on it (JAPP and MICHIE), 1903, T., 282; P., 21.

Acetyldiphenylmethyltetrahydropyrimidine (RUHEMANN and WATSON), 1904, T., 459; P., 48.

***γ*-Acetyl-*βγ*-diphenyl-*βγ*-oxidobutyric acid** and its semicarbazone (JAPP and MICHIE), 1903, T., 281, P., 21.

***α*-Acetyl-*bb*-diphenylthiocarbamide** and the action of caustic alkali and of heat on (DIXON and TAYLOR), 1908, T., 690; P., 74.

Acetylene, apparatus for preparation of (STEINKOPF), 1909, A., i, 753.

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nascent, action of, on benzene in presence of aluminium chloride (PARONE), 1904, A., i, 26.

Acetylene, influence of traces of water on the decomposition of alkali hydrides by (MOISSAN), 1903, A., i, 785.

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action of magnesium phenyl bromide on (ODDO), 1904, A., i, 862.

action of, with acidified solutions of mercury and silver salts (NIEUWLAND and MAGUIRE), 1906, A., i, 721.

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Acetylene, bromo- and chloro-, mercury derivatives of (HOFMANN and KIRMREUTHER), 1910, A., i, 16.

*di*bromo- (LEMOULT), 1903, A., i, 595.

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di-iodo-, preparation of (BILTZ and KÜPPERS), 1905, A., i, 1.

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Acetylenes, cyclic, preparation of (ANDRÉ), 1911, A., i, 277.

Acetylene acetylides, preparation of (MOISSAN), 1903, A., i, 545, 595.

Acetylene black, combustion of, in oxygen (MOISSAN), 1903, A., ii, 142.

Acetylene derivatives, addition of hydroxylamine to (OLIVERI-MANDALÀ), 1909, A., i, 835.

Acetylene lamp (TECLU), 1910, A., ii, 705.

Acetylenecarbamide and its tetra-acetyl derivative (BILTZ and HORMANN), 1908, A., i, 62.

Acetylenediactaldehyde (DUPONT), 1911, A., i, 804.

Acetylenedibutyron (DUPONT), 1911, A., i, 804.

Acetylenedicarboxylic acid, addition of iodine to (JAMES and SUDBOROUGH), 1907, T., 1038; P., 136.

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Acetylenedicarboxylic acid, menthyl esters of (HILDITCH), 1911, T., 223; P., 6.

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Acetylenedicrotonaldehyde (DUPONT), 1911, A., i, 804.

Acetylenediureine, action of hypochlorous acid and its sodium salt on (BILTZ and BEHRENS), 1910, A., i, 589.

Acetylenediisovaleraldehyde (DUPONT), 1911, A., i, 804.

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Acetylenic compounds (LESPIEAU), 1912, A., i, 934.

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Acetyl-*dl*-erythronic acid (NEF), 1908, A., i, 7.

4'-Acetyl-3-ethoxybenzidine (CAIN and MAY), 1910, T., 725.

5-Acetyl-2-ethoxydiphenyliodonium salts (WILLGERODT and BURKHARD), 1912, A., i, 630.

Acetyl-*p*-ethoxyphenacyldialuric acid and corresponding benzoyl derivative (KÜHLING and SCHNEIDER), 1909, A., i, 424.

2-Acetyl-4-ethoxyphenoxyacetic acid (v. GRAFFENRIED and v. KOSTANECKI), 1910, A., i, 631.

2-Acetyl-5-ethoxyphenoxyacetic acid, (v. KOSTANECKI and TAMBOR), 1909, A., i, 320.

γ -Acetyl- α -ethylbutyric acid, and its semicarbazone (BLAISE and LUTTRINGER), 1905, A., i, 627.

γ -Acetyl- α -ethylglutaric acid, ethylester (BLAISE and LUTTRINGER), 1905, A., i, 627.

4-Acetyl-1-ethyl- Δ^1 -cyclohexen-3-one (BLAISE and MAIRE), 1907, A., i, 419; 1908, A., i, 391.

Acetylmethylmalonic acid, imino-, ethyl ester (BEHREND and HENNICKE), 1906, A., i, 313.

1-Acetyl-1-ethylcyclopentan-2-one (BLAISE and KOEHLER), 1909, A., i, 478.

***N*-Acetylformanilideoxime, cyano-** (WIELAND and GMELIN), 1908, A., i, 1013.

Acetylglucosamine and its hydrochloride (MOORE), 1911, T., 1232; P., 157.

Acetylglucosamine, behaviour of, in the organism (MEYER), 1907, A., ii, 118.

- α -Acetylglutaconic acid**, ethyl ester (SIMONSEN), 1910, T., 1914.
- Acetyl-*d*- and *dl*-glutamic acid**, chloro- (FISCHER, KROPP, and STAHLSCHMIDT), 1909, A., i, 368.
- Acetylglutamyl diglycine**, chloro-, and its diethyl ester (FISCHER, KROPP, and STAHLSCHMIDT), 1909, A., i, 368.
- α -Acetylglutaric acid**, ethyl ester, preparation of (PERKIN and SIMONSEN), 1907, T., 1740; P., 197.
- Acetyl glycine** (*acetylaminooacetic acid*), chloro-, hydroxy-, and *di*-iodo-, ethyl esters (CURTIUS and DARAPSKY), 1906, A., i, 403.
- iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), 1911, A., i, 954.
- Acetyl glycineamide**, chloro- (BERGELL and v. WÜLFING), 1910, A., i, 304.
- iodo- (CURTIUS and CALLAN), 1910, A., i, 789.
- Acetyl glycine anilide**, bromo-, and chloro- (CURTIUS and CALLAN), 1910, A., i, 789.
- Acetyl glycine azoimide**, bromo-, chloro-, and iodo- (CURTIUS and CALLAN), 1910, A., i, 789.
- Acetyl glycine benzylidenehydrazide**, bromo-, and iodo- (CURTIUS and CALLAN), 1910, A., i, 789.
- hydroxy- (CURTIUS and WELDE), 1910, A., i, 787.
- Acetyl glycine-ethylhydrazide**, iodo- (CURTIUS and CALLAN), 1910, A., i, 789.
- Acetyl glycine hydrazide**, bromo-, hydrobromide (CURTIUS and CALLAN), 1910, A., i, 789.
- chloro-, hydrochloride and benzylidene derivative of (CURTIUS and WELDE), 1910, A., i, 787.
- Acetyl glycollic acid**. See Acetoxy-acetic acid.
- Acetyl glycolyl glycine**, ethyl ester (CURTIUS and DARAPSKY), 1906, A., i, 403.
- Acetyl glycolyl glycylyl glycine**, ethyl ester (CURTIUS and THOMPSON), 1906, A., i, 403.
- Acetyl glycylyl chloride** (MAX), 1909, A., i, 926.
- Acetyl glycylyl glycine** and chloro- and the ester of the chloro-compound (FISCHER and OTTO), 1903, A., i, 609.
- hydroxy- and *di*-iodo-, ethyl esters (CURTIUS and THOMPSON), 1906, A., i, 403.
- Acetyl glycylyl glycinehydrazide**, hydroxy-, and its benzylidene and acetyl derivatives (CURTIUS and CALLAN), 1910, A., i, 788.
- Acetyl glycylyl-*p*-iodophenylalanine**, chloro- (ABDERHALDEN and BROSSA), 1909, A., i, 801.
- Acetyl glycylyl-leucinamide**, chloro-, (BERGELL and v. WÜLFING), 1910, A., i, 365.
- 1-Acetylguaiacol**, 5-bromo-, and 3-chloro- (JONA), 1912, A., i, 761.
- Acetylguanylcabamide hydrochloride** (OSTROGOVICH), 1909, A., i, 461.
- Acetyl halogenaminobenzenes**, rearrangement of, into halogen acetanilide derivatives (ACREE and JOHNSON), 1907, A., i, 506.
- velocity of rearrangement of (ACREE and JOHNSON), 1907, A., ii, 855.
- 1-Acetylcyclohexanecarboxylic acid**, ethyl ester, and its *p*-nitrophenylhydrazone and semicarbazone, synthesis of (v. BRAUN), 1907, A., i, 893.
- Acetylcyclohexan-2-one**, and its derivatives (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 881; (LESER), 1912, A., i, 778.
- Acetylcyclohexantrione** and its derivatives (HELLER and KRETZSCHMAR), 1912, A., i, 274.
- ϵ -Acetylhexoic acid** and its semicarbazone (WALLACH), 1906, A., i, 371.
- Acetylhexoyl**. See Methyl amyl diketone.
- Acetylhomopiperonylamine** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 1015.
- Acetylhydantoic acid**, thio-, and its ethyl ester and potassium salt (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1032.
- Acetylhydrazide**, amino-. See Glycine hydrazide.
- dicyano*-, and its amino-oxime (RINMAN), 1905, A., i, 389.
- Acetylhydrazobenzene**, nitroso-, reduction of (NOMBLOT), 1910, A., i, 206.
- Acetylhydrocotarnineacetic acid** dibromide, and its methyl ester and dihydro-derivative (AHLERS), 1905, A., i, 786.
- N*-Acetyl-*o*-hydroxyanilino triphenylamine** (GAMBARJAN), 1909, A., i, 911.
- 4-Acetyl-3-*p*-hydroxy-*m*-methoxyphenyl-dihydro-2:4-benzoxazine-1-one** (EKELEY and DEAN), 1912, A., i, 212.
- Acetyl-*p*-hydroxyphenylethylmethylamine** (WALPOLE), 1910, T., 943.
- Acetylidene compounds**, constitution of (LAWRIE), 1907, A., i, 3.

- Acetylmino-**. See under the parent Substance.
- Acetyllindandione**. See Diketoacetylhydriindene.
- 3-Acetyllindole**, phenylhydrazone of (ODDO and SESSA), 1911, A., i, 487.
- Acetyllindoxyl**, 6-bromo- (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 318.
- Acetyl-*p*-iodophenylalanine**, chloro- (ABDERHALDEN and BROSSA), 1909, A., i, 801.
- Acetyl- ψ -isatindioxime**, action of potassium hydroxide on (KOZAK), 1909, A., i, 673.
- Acetylketen**. See *cyclo*Butane-1:3-dione.
- Acetylketo-**. See Ketoacetyl-.
- Acetylkinio** (SIMONSEN), 1911, T., 1533.
- Acetylactic acid**. See α -Acetoxypropionic acid.
- Acetyl-*l*-leucine** (1-*a*-acetylaminohexonic acid), chloro- (FISCHER and STEINGROEYER), 1909, A., i, 366; (ABDERHALDEN and WEBER), 1910, A., i, 719; (ABDERHALDEN and FODOR), 1912, A., i, 951.
- Acetyl-*d*- and *dl*-isoleucine**, chloro- (ABDERHALDEN, HIRSCH, and SCHULER), 1909, A., i, 769.
- Acetyl-*l*-isoleucine**, chloro- (ABDERHALDEN and SCHULER), 1910, A., i, 305.
- Acetyl-leucineamide**, chloro- (BERGELL and v. WÜLFING), 1910, A., i, 365.
- Acetyl-*l*-leucyl-*d*-alanine**, chloro- (ABDERHALDEN and FODOR), 1912, A., i, 951.
- Acetyl-*l*-leucyl-glycyl-*l*-leucine**, chloro- (ABDERHALDEN and WEBER), 1910, A., i, 719.
- l*-Acetylmalic acid**, hydrolysis of (HOLMBERG), 1912, A., i, 943.
- Acetylmalonic acid**, ethyl ester, action of hydroxylamine on (PALAZZO and SALVO), 1905, A., i, 858.
- Acetylmandelic acid** and its ammonium salt, amide, anilide, *p*-phenetidine, piperidine, and chloride (ANCHÜTZ and BÖCKER), 1909, A., i, 729.
- Acetylmandelic acids** and their *l*-menthyl esters (MCKENZIE and HUMPHRIES), 1909, T., 1106.
- Acetylmatairesinol** (EASTERFIELD and BEE), 1910, T., 1030; P., 7.
- 5-Acetyl-2-methoxydiphenyliodonium hydroxide** and its salts (WILGERODT and BURKHARD), 1912, A., i, 630.
- 2-Acetyl-4-methoxyphenoxyacetic acid** and its ethyl ester (v. GRAFFENRIED and v. KOSTANECKI), 1910, A., i, 630.
- 2-Acetyl-5-methoxyphenoxyacetic acid** and its ethyl ester (v. KOSTANECKI and TAMBOR), 1909, A., i, 319.
- Acetyl-*p*-methoxyphenylethylmethylamine** (WALPOLE), 1910, T., 943.
- 1-Acetylmethylaminocanthraquinone** and 4-nitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 456.
- Acetylmethylaminoterephthalic acid**, methyl ester (WEGSCHEIDER, FALTIS, BLACK, and HUPPERT), 1912, A., i, 264.
- 4-Acetyl-5-methylaziminole**, oxime of (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- 3-Acetyl-7-methylbenzotetronic acid**. See 3-Acetyl-7-methylcoumarin, 4-hydroxy-.
- γ -Acetyl- β -methylbutyric acid**, semicarbazone of (AUWERS and PETERS), 1910, A., i, 826.
- Acetylmethylcarbamide**, oximinocyan- (MERCK), 1911, A., i, 167.
- 9-Acetyl-3-methyl-carbazole and -carbazyl methyl ketone** (BORSCH and FEISE), 1907, A., i, 243.
- Acetylmethylcarbinol** (*dimethylketol*) (DIELS and STEPHAN), 1909, A., i, 472.
- presence of, in certain vinegars (PASTUREAU), 1905, A., i, 559.
- in certain Italian wines (SALOMONE), 1907, A., ii, 903.
- formation of, in the acid fermentation of wines, and its osazone and semicarbazone (PASTUREAU), 1908, A., ii, 136.
- preparation of (HIGLEY), 1907, A., i, 461.
- production of (HARDEN; HARDEN and WALPOLE), 1906, A., ii, 380.
- production of, by bacteria (HARDEN and NORRIS), 1912, A., ii, 282, 474; (THOMPSON), 1912, A., ii, 282.
- production of, by the bacteria of the group *Bacillus mesentericus* (DESMOTS), 1904, A., ii, 276.
- and its semicarbazone (KLING), 1905, A., i, 504; (BILTZ and HORRMANN), 1908, A., i, 516.
- and its bimolecular forms and benzoyl derivative (DIELS and STEPHAN), 1907, A., i, 1000.
- condensation of, with ethyl oxalate and diacetylmonoxime methyl ether (DIELS and STERN), 1907, A., i, 466.
- Acetylmethylcarbinyl acetate**, semicarbazone of (HIGLEY), 1907, A., i, 461.

- 3-Acetyl-6-methylcoumarin, 4-hydroxy- (ANSCHÜTZ and SIEBEN), 1909, A., i, 665.
- 3-Acetyl-7-methylcoumarin, 4-hydroxy-, and its ethers, and metallic salts (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.
- 1-Acetyl-4-methylcoumarone, 2-hydroxy-, and its derivatives (AUWERS), 1910, A., i, 630; 1912, A., i, 484.
- Acetyl- α -methyl dihydromorphimethine, dibromo-, salts of (VONGERICHTEN and DENS DORFF), 1907, A., i, 1069.
- 2-Acetyl-2-methyl dihydroperimidine and its derivatives (SACHS), 1909, A., i, 432.
- 4-Acetyl-1-methyl-4-ethyl cyclohexan-3-one (LÉSER), 1912, A., i, 778.
- 5-Acetyl-4-methyl-1-ethyl pyrazole-3-carboxylic acid, and its ethyl ester (KLAGES and RÖNNEBURG), 1903, A., i, 529.
- α -Acetyl- β -methylglutaconic acid, ethyl ester (BLAND and THORPE), 1912, T., 1565.
- Acetylmethylglyoxime (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 210.
- 1-Acetyl-1-methyl cyclohexane (TARBOURIECH), 1910, A., i, 558.
- 4-Acetyl-1-methyl cyclohexane and its derivatives (WALLACH and RITTER), 1911, A., i, 472.
- d*-3-Acetyl-1-methyl cyclohexan-3-ol, semicarbazone of (HAWORTH, PERKIN, and WALLACH), 1911, T., 131.
- d*-3-Acetyl-1-methyl- Δ^2 -cyclohexene, and its derivatives (HAWORTH, PERKIN, and WALLACH), 1911, T., 128.
- 4-Acetyl-1-methyl- Δ^1 -cyclohexene and its oxime and semicarbazone (WALLACH and EVANS), 1908, A., i, 404.
- δ -Acetyl- δ -methylhexoic acid and its derivatives (CROSSLEY and RENOUF), 1911, T., 1111; P., 137.
- 1-Acetyl-4-methylhydantoic acid, thio- (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1032.
- 1-Acetyl-2-methylindole and its salts (DIELS and KOLLISCH), 1911, A., i, 231.
- 3-Acetyl-2-methylindole, α -amino- (FISCHER and KAAS), 1906, A., i, 455.
- 3-Acetyl-1-methylindoxyl, 6-bromo- (ETTINGER and FRIEDLÄNDER), 1912, A., i, 729.
- Acetylmethylmorphimethine (KNORR, HÖRLEIN, and STAUBACH), 1909, A., i, 952.
- Acetyl- α -methylmorphimethine, bromo-derivatives (VONGERICHTEN and DENS DORFF), 1907, A., i, 1069.
- Acetylmethylmorphol and its semicarbazone (KNORR, HÖRLEIN, and STAUBACH), 1909, A., i, 952.
- Acetylmethylmorpholquinone, synthesis of, and its 9-carboxylic acid (PSCHORR and VOGTHER), 1903, A., i, 184.
- 4-Acetyl-5-methyl-1:2:3-oxadiazole (*di-azocetylacetone anhydride*) (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 204; (WOLFF and GREULICH), 1912, A., i, 1029.
- 4-Acetyl-5-methylisooxazalone and its phenylhydrazones and *p*-nitrophenylhydrazones (SCHMIDT and WIDMANN), 1909, A., i, 525.
- 2-Acetyl-1-methyl- Δ^1 -cyclopentene, semicarbazone (BLAISE and KOEHLER), 1910, A., i, 561.
- 3-Acetyl-1-methylpiperidine and its oxime, phenylhydrazones, and semicarbazones and their hydrochlorides (LIPP and WIDMANN), 1905, A., i, 662.
- Acetylmethylprunol (POWER and MOORE), 1910, T., 1106.
- 5-Acetyl-4-methylpyrazole (KLAGES and RÖNNEBURG), 1903, A., i, 528.
- 5-Acetyl-4-methylpyrazole-3-carboxylic acid and its ethyl ester (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 209.
- and its esters, and phenylhydrazones (KLAGES and RÖNNEBURG), 1903, A., i, 528.
- 3-Acetyl-4-methylpyridine-2(or 6)-carboxylic acid (MUMM and BERGELL), 1912, A., i, 937.
- 3-Acetyl-4-methylpyridine-2:6-dicarboxylic acid (MUMM and BERGELL), 1912, A., i, 936.
- 3-Acetyl-2-methylquinoline and its semicarbazone (STARK), 1907, A., i, 973.
- Acetyl-6-methyltetrahydroquinoline, chloro-, and its hydrochloride (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-6-methyltetrahydroquinoline-carboxylic acid (KUNCKELL), 1910, A., i, 636.
- 1-Acetyl-8-methyltetrahydroquinoline-carboxylic acid (KUNCKELL), 1910, A., i, 636.
- N*-Acetylmethyl dithiocarbamic acid, benzyl and methyl esters (DELÉPINE), 1903, A., i, 237.
- Acetylmethylthiodiazole and its mercurichloride, oxime, and semicarbazone (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 208.
- 2-Acetylmethylthiol-4-methyl-1:6-dihydro-6-pyrimidone (JOHNSON and MORAN), 1912, A., i, 914.

- 4-Acetyl-5-methyl-1:2:3-triazole** (WOLFF and KRÜCHE), 1912, A., i, 1030.
- Acetylmorphine**, chloro- (WIELAND and KAPPELMEIER), 1911, A., i, 746.
- Acetyl- β -naphthafuran** and its oxime, phenylhydrazone, semicarbazone and bromo-derivatives (STOERMER and SCHÄFFER), 1903, A., i, 847.
- Acetylnaphthalic anhydride** (GRAEBE and HAAS), 1903, A., i, 409.
- 3-Acetyl- α - β -naphthapyrone**, 4-hydroxy-, and its ethyl ether, and metallic salts (ANSCHÜTZ and RUNKEL), 1909, A., i, 732.
- 3-Acetyl- β - β -naphthapyrone**, 4-hydroxy-, and its metallic salts (ANSCHÜTZ and GRAFF), 1909, A., i, 665.
- 2-Acetyl-1-naphthol**. See β -Naphthyl methyl ketone, 1-hydroxy-.
- 2-Acetyl-1-naphthoxyacetic acid** (v. KOSTANECKI and TAMBOR), 1909, A., i, 320.
- 2-Acetylnaphthylene-1-diazo-2-imide**, 4-bromo- (MORGAN and GODDEN), 1910, T., 1713.
- Acetylnarcotine** (KNOLL & Co.), 1908, A., i, 285.
- Acetylnitromethylnorhemipinic anhydride** (WEGSCHEIDER and KLEMENC), 1911, A., i, 542.
- 4-Acetyl-3-*m*- and *p*-nitrophenyldihydro-2:4-benzoxazines** (EKELEY and DEAN), 1912, A., i, 212.
- Acetylisonitrosoacetoacetic acid**, ethyl ester (WAHL), 1906, A., i, 408.
- Acetylnonoyl**. See Methyl octyl diketone.
- Acetyloxalylphenylmethylpropene**. See 2-Acetyl-4-phenyl-3-methyl- $\Delta^{2:4}$ -cyclopentadien-5-ol-1-one.
- α -Acetyloximino- β -phenylhydrazinobutyric acid**, ethyl ester (WAHL), 1905, A., i, 408.
- γ -Acetylpentane- $\alpha\gamma\epsilon$ -tricarboxylic acid**, ethyl ester (PERKIN and SIMONSEN), 1907, T., 1740; P., 198.
- 1-Acetylcyclopentan-2-one** (BLAISE and KOEHLER), 1909, A., i, 478.
- 1-Acetyl- Δ^1 -cyclopentene** (PERKIN and WALLACH) 1909, A., i, 154; (BOUVEAULT), 1909, A., i, 372.
- oxime** (WALLACH and v. MARTIUS), 1909, A., i, 385.
- 9-Acetylphenanthrene** and its derivatives (WILLGERODT and ALBERT), 1911, A., i, 882.
- 6-Acetylphenoxazine** and 3:9-*d*-nitro- (KEHRMANN and SAAGER), 1903, A., i, 279.
- p*-Acetylphenoxyacetic acid**, ω -chloro-, and its salts and ethyl ester (KUNCKELL), 1905, A., i, 646.
- α -Acetylphenylacetanilide** (WOLFF and GREULICH), 1912, A., i, 1029.
- p*-Acetylphenylacetic acid**, ω -chloro-, and ω -chloro-3-nitro- (KUNCKELL and FLOS), 1908, A., i, 890.
- Acetylphenylacetoneitriles**, *m*- and *p*- (KUNCKELL and FLOS), 1906, A., i, 848.
- o*-, *m*-, and *p*-chloro-, (KUNCKELL and FLOS), 1908, A., i, 890.
- Acetyl-*l*-phenylalanine**, chloro- (FISCHER and SCHOELLER), 1907, A., i, 1038.
- α -Acetyl- γ -phenyl- $\Delta\beta$ -butenoic acid**, γ -amino-, ethyl ester (BORSCHÉ and FELS), 1907, A., i, 80.
- γ -hydroxy-, lactone of, and its benzoyl derivative and its phenylhydrazone and semicarbazone (BORSCHÉ and FELS), 1906, A., i, 509.
- as*-Acetylphenylcarbamide** (BRUCE), 1904, A., i, 492.
- Acetylphenylcarbamide**, cyano- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 196.
- Acetylphenylisocarbamide** methyl ether, *s*- and *as*-, and their salts (BRUCE), 1904, A., i, 492.
- 7-Acetyl-2-phenyleinchonic acid** (BORSCHÉ), 1909, A., i, 53.
- 4-Acetyl-3-phenyldihydro-2:4-benzoxazine-1-one** (EKELEY and DEAN), 1912, A., i, 211.
- 3-Acetyl-2-phenyldihydro-1:3-benzoxazine-4-one**, 2-hydroxy- (MCCONNAN and TITHERLEY), 1906, T., 1337; P., 239.
- p*-Acetylphenyldihydrodioxindole**, and its derivatives (SCHOLTZ and WOLFRUM), 1910, A., i, 771.
- 1-Acetyl-3-phenyldioxindole** (KOHN and OSTERSETZER), 1912, A., i, 51.
- 4-Acetyl-1:4-phenylenediamine-2-thiolacetic acid**, 6-chloro-, sodium salt, and anhydride (KALLE & Co.), 1909, A., i, 736.
- Acetylphenylethylsemicarbazide** (BUSCH and FREY), 1903, A., i, 539.
- 2-Acetyl-1-phenyl-3-furyl-5-isopyrazolone** (TORREY and ZANETTI), 1910, A., i, 893.
- Acetylphenylglycine**, *p*-amino- and *p*-nitro- (BADISCHE ANILIN- & SODA-FABRIK), 1904, A., i, 806.
- o*-chloro-, and its ethyl ester (SCHWALBE, SCHULZ, and JOCHHEIM), 1908, A., i, 975.
- chloro-, and bromo-, methyl esters (FISCHER and GLUUD), 1909, A., i, 888.

- Acetylphenylglycinearsinic acid**, quinine ester of (OECHSLIN), 1911, A., i, 760.
- Acetylphenylglycine-*o*-carboxylic acid**, preparation of (VORLÄNDER and MUMME), 1904, A., i, 317; (BADISCHE ANILIN- & SODA-FABRIK), 1904, A., i, 806.
- Acetylphenylhydrazine**, conditions of formation of (MILRATH), 1908, A., i, 572.
- action of, on malonic acid, (MICHAELIS and SCHENK), 1907, A., i, 966.
- 3-Acetyl-1-phenylisindazole**, 6-nitro- (BORSCHKE), 1909, A., i, 233.
- 1-*p*-Acetylphenyl-2-methylbenziminazole**, 4:7-dinitro-6-hydroxy-, and its oxime and phenylhydrazine (MELDOLA and KUNTZEN), 1911, T., 44.
- 3-Acetyl-1-phenyl-4-methyl- $\Delta^{1,3}$ -cyclobutadiene-2-carboxylic acid** (RUHEMANN and MERRIMAN), 1905, T., 1391; P., 225.
- 2-Acetyl-4-phenyl-3-methyl- $\Delta^{2,4}$ -cyclopentadien-5-ol-1-one** (RUHEMANN and MERRIMAN), 1905, T., 1390.
- and its oxime, phenylhydrazine and semicarbazone (RUHEMANN), 1906, T., 683; P., 89.
- β -Acetyl- α -phenylpropionic acid** and its amide (RUHEMANN), 1904, T., 1455; P., 206.
- 5-Acetyl-4-phenylpyrazole-3-carboxylic acid**, and its ethyl ester (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 209.
- 5(or 3)-Acetyl-4-phenylpyrazoline**, and its oxime (AZZARELLO), 1905, A., i, 941.
- 2-Acetyl-3-phenyl-5-styrylcyclohexan-5-ol-1-one** (BORSCHKE), 1910, A., i, 683.
- 2-Acetyl-3-phenyl-5-styryl- Δ^5 -cyclohexenone** (BORSCHKE), 1910, A., i, 683.
- Acetylphenyldithiocarbazinic acid**, methyl ester (BUSCH and SCHNEIDER), 1903, A., i, 534.
- Acetylphenylthiodiazole** and its semicarbazone (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- Acetylphenylisourethine** (PONZIO and CHARRIER), 1907, A., i, 828.
- Acetylphosphamic acid**, halogen and halogen-nitro-, derivatives of (STEINKOPF, BENEDEK, GRÜNUPP, and KIRCHHOFF), 1908, A., i, 962.
- Acetylphosphorous acid** (BROOKS), 1912, A., i, 332.
- γ -Acetylpimelic acid** and its semicarbazone and ethyl ester (PERKIN and SIMONSEN), 1907, T., 1741; P., 198.
- Acetylpiperone**, ω -nitro-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 655.
- Acetylcyclopropane**, (*acetyltrimethylene*) (SCHEDA), 1903, A., i, 509; (HARRIES), 1903, A., i, 606.
- β -Acetylpropionic acid**. See Levulic acid.
- Acetylpropionyl**. See Methyl ethyl diketone.
- α -Acetyl- γ -propionyl-*n*-butyric acid**, ethyl ester, and its disemicarbazone (BLAISE and MAIRE), 1908, A., i, 391.
- γ -Acetyl- α -isopropyl-*n*-butyric acid** (SEMMLER and MCKENZIE), 1906, A., i, 373.
- Acetylpropylcarbamide** (MAUGUIN), 1911, A., i, 358.
- δ -Acetyl- β -isopropylvaleric acid** and its semicarbazone (WALLACH and CHALLENGER), 1911, A., i, 472.
- Acetylprunol** (POWER and MOORE), 1910, T., 1105.
- Acetylpyrogallol trimethyl ether**, and bromo- (MANNICH and HAHN), 1911, A., i, 649.
- Acetylpyrogallol**, ω -chloro-, and ω -iodo-, triacetates (MANNICH and HAHN), 1911, A., i, 649.
- Acetylpyrotartaric acid**, methyl ester, action of magnesium organic compounds on (BARBIER and LOQUIN), 1911, A., i, 708.
- 2-Acetylpyrrole**, azine of (KNORR and HESS), 1912, A., i, 900.
- Acetylpyrroles** (KNORR and HESS), 1912, A., i, 900.
- Acetylpyruvic acid** (*acetoneoxalic acid*) and its salts and derivatives (MUMM and BERGELL), 1912, A., ii, 936.
- 7-Acetylquindolinium bromide** (FICHTER and ROHNER), 1911, A., i, 86.
- Acetylquinine**, preparation of (CHEMISCHE FABRIK VON HEYDEN), 1903, A., i, 513.
- Acetylresorcinol** (EYKMAN), 1904, A., i, 665.
- Acetylricinoleylricinoleic acid** (GRÜN), 1909, A., i, 876.
- 1-Acetylaphosafranon** (KEHRMANN and MASSLENIKOFF), 1912, A., i, 1033.
- Acetylsalicylaldehyde**. See *o*-Acetoxybenzaldehyde.
- Acetylsalicylic acid**. See *o*-Acetoxybenzoic acid.
- Acetylsalicylosalicylic acid**. See 2-*o'*-Acetoxybenzoyloxybenzoic acid.
- Acetylsalicylphenetide**. See *o*-Acetoxybenzoylphenetide.

- Acetylsantalol**, chloro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 137.
- Acetyldesmotroposantonin**, optically active, crystalline form of (MILLOSEVICH), 1904, A., i, 320.
- Acetylserine**, chloro- (FISCHER and ROESNER), 1910, A., i, 657.
- Acetylstrychninolic acid** (LEUCHS and SCHNEIDER), 1909, A., i, 602.
- w*-**Acetylstyrene-*m*-carboxylic acid** (SIMONIS, BOEHME, and BENENSON), 1912, A., i, 564.
- α -**Acetylsuccinic acid**, β -oximino-, ethyl ester (SCHMIDT and WIDMANN), 1909, A., i, 524.
- β -**Acetylsuccinic acid**, α -cyano-, esters of (CHASSAGNE), 1907, A., i, 892.
- α -nitroso-, ethyl ester (SCHMIDT and WIDMANN), 1909, A., i, 454.
- Acetyltannin**, action of alcoholic ammonia on (NIERENSTEIN), 1910, A., i, 487; 1912, A., i, 290.
- Acetyltetrahydronaphthastyril** (SCHROETER and RÖSSLER), 1903, A., i, 118.
- Acetyltetrahydroquinoline** platinichloride, and 6-bromo-8-nitro-, and its stannous chloride derivative (KUNCKELL), 1910, A., i, 430.
- 6-chloro-, and its nitrosamine (KUNCKELL and VOLLHASE), 1909, A., i, 835; (KUNCKELL), 1910, A., i, 636.
- 1-**Acetyltetrahydroquinoline-6-carboxylic acid** (KUNCKELL and VOLLHASE), 1909, A., i, 835; (KUNCKELL), 1910, A., i, 636.
- Acetyltetramethyldehydrohæmatoxylins**, α - and β - (HERZIG and POLLAK), 1904, A., i, 81.
- α -**Acetyltetronic acid** and its derivatives (BENARY), 1909, A., i, 890; 1910, A., i, 434.
- Acetylthebaolquinone**, synthesis of (PSCHORR, SEYDEL, and STÖHRER), 1903, A., i, 167.
- Acetylthiobenzamide** (MATSUI), 1910, A., i, 667.
- o*-**Acetylthiolbenzoic acid** (HINSBERG), 1910, A., i, 260.
- Acetylthio-*p*-toluamide** (MATSUI), 1910, A., i, 667.
- p*-**Acetyl-*o*-thymol** (EYKMAN), 1904, A., i, 665.
- Acetyltoluene**. See Methylacetophenone.
- o*-**Acetyltoluene**, ω -5-dichloro-. See *o*-Tolyl chloromethyl ketone, 5-chloro-.
- Acetyltoluenes**, 4- and 6-, 3-hydroxy-. See Acetylcresols.
- N*-**Acetyl-3-*p*-toluenehydrazo-*p*-cresol** (AUWERS, HIRT, and V. DER HEYDEN), 1909, A., i, 438.
- Acetyl-*p*-tolylisourethine** (PONZIO and CHARRIER), 1907, A., i, 828.
- Acetyltriamines**, aromatic, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 977.
- Acetyltriazole**, hydroxy-, and its salts and semicarbazone (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 206.
- Acetyltriglycylglycine**, chloro- (FISCHER), 1904, A., i, 653.
- Acetyltrimethyldehydrobrazilin**, bromo- (HERZIG and POLLAK), 1903, A., i, 270.
- C*-**Acetyltrimethyldihydroresorcin** and its derivatives (CROSSLEY and RENOUF), 1912, T., 1536; P., 223.
- Acetyltrimethylene**. See Acetylcyclopropane.
- 2-**Acetyl-1:1:3-trimethylcyclohexan-3-ol** (LÉSER), 1910, A., i, 48.
- 4-**Acetyl-1:1:4-trimethylcyclohexan-3-one** and its oxime (LÉSER), 1912, A., i, 779.
- Acetyltrimethylitamic anhydride** (NOYES), 1905, A., i, 322.
- 3-**Acetyl-1:1:2-trimethylcyclopentane**, its semicarbazone and oxime (BLANC), 1909, A., i, 101.
- 1-**Acetyl-2:3:3-trimethyl- Δ^1 -cyclopentene** and its oxime (BLANC), 1906, A., i, 524; 1909, A., i, 101.
- 3-**Acetyl-2:4:5-trimethylpyrrole** (FISCHER and BARTHOLOMÄUS), 1912, A., i, 384; (COLACICCHI), 1912, A., i, 647.
- Acetyltropyl-lupineine** and -**tropineine** (CHININFABRIK BRAUNSCHWEIG; BUCHLER & Co.), 1904, A., i, 685.
- Acetyl-*l*-tryptophan**, chloro- and iodo- (ABDERHALDEN and BAUMANN), 1908, A., i, 932.
- Acetyltyrosine**, iodo-derivatives of (ABDERHALDEN and GUGGENHEIM), 1908, A., i, 887.
- Acetyl-*l*-tyrosine**, chloro-, and its derivatives (FISCHER), 1904, A., i, 652; 1908, A., i, 544.
- Acetyltyrosylglycine**, chloro-, and its derivatives (FISCHER), 1908, A., i, 544.
- Acetyltyrosylglycyl-*d*-alanine**, chloro-, methyl ester, methyl carbonate of (FISCHER), 1908, A., i, 887.
- Acetylurethane**, cyano-, and oximino-cyano- (CONRAD and SCHULZE), 1909, A., i, 212.
- Acetyl-*d*-valine**, chloro- (FISCHER and SCHEIBLER), 1908, A., i, 957.
- Acetylisoanillic acid**, 2:6-dinitro- (WEGSCHEIDER and KLEMENC), 1910, A., i, 671.

Acetylveratrole, 4-amino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 262.

N-benzoyl derivative of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1049.

chloro-, and cyano- (BARGELLINI and FORLI-FORTI), 1911, A., i, 902.

Acetylveratrone, ω -nitro-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS & BRÜNING), 1908, A., i, 655.

s-**Acetyl-*p*-xylylhydrazide** (WILLGERODT and LINDENBERG), 1905, A., i, 551.

Acetylyangonic acid and lactone (WINZHEIMER), 1908, A., i, 805.

Achillea nobilis, essential oil of (ECHTERMEIER), 1905, A., i, 535.

Achlys triphylla, occurrence of coumarin in (BRADLEY), 1907, A., ii, 499.

Achras sapota, chicle gum from (TSCHIRCH and SCHERESCHESKI), 1905, A., i, 685.

Acid, free, in electrolytic copper baths, estimation of (DEBAISIEUX), 1909, A., ii, 756.

of oils and fats, estimation of (MARX), 1910, A., ii, 360; (MAYER), 1910, A., ii, 361.

$C_2H_8O_9P_2$, and its salts, from wheat bran (PATTEN and HART), 1904, A., ii, 509.

$C_4H_8O_2$, from the hydrocarbon $C_{12}H_{22}$ (GOLDBERGER and TANDLER), 1906, A., i, 58.

$C_4H_4O_3N_2$, esters, and their salts and amine compounds, from the action of carbamide on compounds of cyanoacetic acid (FRERICHS and HARTWIG), 1906, A., i, 74.

$C_4H_5O_5N$, from the hydrolysis of the methyl derivative of isonitrosomal-onamide (RATZ), 1904, A., i, 300.

$C_4H_5O_5N_3$, and its salts, from the methylation of silver nitroacetamide (RATZ), 1904, A., i, 859.

$C_4H_6O_8S$, from maleic acid and sodium thiosulphate, and its derivatives (TANATAR and VOLJANSKY), 1912, A., i, 941.

$C_4H_7O_3N_3$, ethyl ester, from ethyl bisdiazooacetate (BETTI), 1904, A., i, 533.

$C_4H_5O_2N_3S$, from 3-amino-2-imino-4-ketotetrahydrothiophen and nitrous acid, and its lead salt (BENARY), 1910, A., i, 580.

$C_5H_4O_3N_2$, and its salts, from the action of bromine on malylureide (GABRIEL), 1906, A., i, 636.

Acid, $C_5H_7O_4N_5$, dibasic, from oxidation of uric acid (BEHREND and BAUER), 1909, A., i, 272.

$C_5H_8O_5N_2$, from the oxidation of nitrosopiperidine in acetone solution (VORLÄNDER and WALLIS), 1906, A., i, 764.

$C_6H_8O_8$, from the action of calcium hydroxide on lactose (KILIANI), 1908, A., i, 716.

$C_6H_{10}O_3$, from the oxidation of trihydroxydihydro- α -camphylic acid (PERKIN), 1903, T., 840.

$C_6H_{10}O_7$, and its salts, from the action of calcium hydroxide on lactose (KILIANI), 1908, A., i, 716.

$C_6H_{10}O_9$, from the oxidation of dextrose, and its barium salt (NEUBERG), 1910, A., i, 711.

$C_6H_{12}O_4$, obtained in the preparation of α -methylbutaldehyde by Claisen's method (NEUSTÄDTER), 1907, A., i, 14.

$C_6H_8O_5N_2$, from the action of sodium ethoxide on ethyl malonamate (DE MOULPIED and RULE), 1907, T., 177; P., 13.

$C_7H_6O_4$, and its esters, from the hydrolysis of ethyl 6-methyl-2-pyrone-3:5-dicarboxylate (SIMONSEN), 1908, T., 1027.

$C_7H_8O_4$, and its ethyl ester and the phenylhydrazone and semicarbazone of the ester, from the action of sulphuric acid on 3-nitro-*p*-cresol (SCHULTZ), 1907, A., i, 1030.

$C_7H_{10}O_4$, from oxidation of acid $C_8H_{12}O_5$, from oxidation of cholic acid (PANZER), 1909, A., i, 586.

$C_7H_{10}O_8$, from gynocardinic acid (POWER and LEES), 1905, T., 351; P., 89.

$C_7H_{10}O_6$, and its silver salt, from picrotinic acid (ANGELICO), 1911, A., i, 1004.

$C_7H_{12}O_9$, from oxidation of 1:1-dimethylcyclopentan-2-ol and its silver salt (KIJNER), 1911, A., i, 43.

$C_7H_{12}O_3$, and its phenylurethane and acetyl derivative, from the lactone from $\alpha\alpha\beta$ -trimethyl- $\beta\gamma$ -dibromobutyric acid (BLAISE and COURTOT), 1905, A., i, 563.

$C_7H_{12}O_3$, from the action of sulphuric acid on $\Delta^{1:4(8)}$ -terpadienol (2) or (3) (MANASSE and SAMUEL), 1903, A., i, 46.

$C_7H_{12}O_3$, from the action of potassium carbonate on formylisobutacetaldol (BUSCH and GOLDENTHAL), 1907, A., i, 184.

- Acid**, $C_7H_{12}O_7$, from rock oil (AHRENS), 1907, A., i, 269.
- $C_7H_{14}O_8$, barium salt, from β -methylheptan- ζ -ol (GUERBET), 1912, A., i, 527.
- $C_8H_8O_4$, from oxidation of caryophyllene (DEUSSEN), 1909, A., i, 171.
- $C_8H_{12}O_2$, and its methyl ester, from the action of ethyl acetate on the sodium derivative of propionin (BOUVEAULT and LOCQUIN), 1907, A., i, 479.
- $C_8H_{12}O_3$, from oxidation of terecamphene (ASCHAN), 1912, A., i, 367.
- $C_8H_{12}O_3$, and its ethyl ester, from polymeride of crotonaldehyde (DELÉPINE), 1910, A., i, 219.
- $C_8H_{12}O_3$, from condensation of crotonaldehyde, and its barium salt (SMEDLEY), 1911, T., 1632.
- $C_8H_{12}O_5$, and an isomeride, from oxidation of cholic acid (PANZER), 1909, A., i, 586.
- $C_8H_{14}O_2$, and its salts, from the distillation of β -hydroxy- α -dimethylhexoic acid (RAICHSTEIN), 1907, A., i, 822.
- $C_8H_{14}O_2$, from caryophyllene and its derivatives (SEMMLER and MAYER), 1912, A., i, 121.
- $C_8H_{14}O_2$, from oxidation of ketone $C_{10}H_{18}O$, and its derivatives (SEMMLER and MAYER), 1912, A., i, 121.
- $C_8H_{14}O_3$, from the oxidation of the oxide $C_{10}H_{20}O$ (SAMEC), 1907, A., i, 746.
- $C_8H_{14}O_4$, and its barium salt, from the oxidation of the aldehyde, $C_8H_{14}O_3$ (RAPER), 1907, T., 1835.
- $C_8H_{14}O_4$, from 2-acetyl-1:1-dimethyl-3-cyclohexanone (LÉSER), 1910, A., i, 48.
- $C_8H_7O_6N$, from the oxidation of galipine (TRÖGER and MÜLLER), 1910, A., i, 415.
- $C_8H_7O_6Cl_3$, from oxidation of a chloralose (HANRIOT), 1909, A., i, 288.
- $C_8H_{13}O_4Br$, derivative of crotonaldehyde polymeride (DELÉPINE), 1910, A., i, 219.
- $C_8H_{16}O_6N_2$, from casein (SKRAUP), 1904, A., i, 539.
- $C_8H_8O_2NCl$, from *o*-chloroanilinoacetone nitrile (KNOEVENAGEL and KLUCKE), 1904, A., i, 989.
- $C_9H_8O_8$, and its derivatives, from pimpinellin (HERZOG and HÂNCU), 1908, A., i, 905.
- Acid**, $C_9H_8O_8$, from the condensation of ethyl dibromomethylcyclopropanedicarboxylate with ethyl sodiomalonate (JONES), 1905, T., 1065; P., 216.
- $C_9H_{12}O_4$ (or $C_9H_{14}O_4$), from the bromo-compound of cineolic anhydride, (RUPE and LOTZ), 1907, A., i, 12.
- $C_9H_{12}O_5$, from oxidation of acid, $C_9H_{14}O_6$, from oxidation of cholic acid (PANZER), 1909, A., i, 586.
- $C_9H_{12}O_6$, from camphenic acid, and its salts and anhydride (HAWORTH and KING), 1912, T., 1980.
- $C_9H_{14}O_2$, and its salts, from aminolauronic anhydride (NOYES and TAVEAU), 1906, A., i, 397.
- $C_9H_{14}O_2$, from the decomposition of camphene ozonide, and its methyl ester (SEMMLER), 1909, A., i, 170.
- $C_9H_{14}O_3$, from the oxidation of pinyamine (WALLACH and ENGELBRECHT), 1906, A., i, 685.
- $C_9H_{14}O_3$, from oxidation of terecamphene (ASCHAN), 1912, A., i, 367.
- $C_9H_{14}O_4$, from the sodio-derivative of dimethyl α -thujadicarboxylate, and its silver salt (THOMSON), 1910, T., 1515; P., 178.
- $C_9H_{14}O_4$, from the oxidation of pino-carveol (WALLACH and JÄGER), 1906, A., i, 683.
- $C_9H_{14}O_4$, from the oxidation of 1:1:5-trimethyl- Δ^4 -cyclohexen-3-one (CROSSLEY and GILLING), 1908, P., 130.
- $C_9H_{14}O_6$, and its esters, obtained as a by-product of the electrolytic preparation of adipic acid (BOUVEAULT), 1904, A., i, 9.
- $C_9H_{14}O_6$, ethyl ester, from ethyl sodiopropylmalonate and ethyl α -bromopropionate (TSCHUGAEFF and SCHLOESINGER), 1905, A., i, 231.
- $C_9H_{14}O_6$, from oxidation of cholic acid (PANZER), 1909, A., i, 586.
- $C_9H_{16}O_2$, from oxidation of ketone $C_{10}H_{18}O$, and its derivatives (SEMMLER and MAYER), 1912, A., i, 121.
- $C_9H_{16}O_3$, and its semicarbazone, oxime, and silver salt, from the oxidation of pulegone (WALLACH and SELDIS), 1903, A., i, 568.
- $C_9H_{16}O_3$, from the oxide, $C_{10}H_{20}O$, from propionepinacone (KOHN), 1905, A., i, 167.
- $C_9H_{16}O_3$, and its lactone, and methyl ether, from aminolauronic anhydride (NOYES and TAVEAU), 1906, A., i, 397.

Acid, $C_9H_{16}O_4$, from oxidation of 1:1-diethyl- Δ^2 -cyclopentane (KIJNER and VOZNESENSKY), 1911, A., i, 968.

$C_9H_{18}O_3$, from the oxidation of the oxides, $C_9H_{18}O$, and $C_{10}H_{20}O$ (SAMEC), 1907, A., i, 746.

$C_9H_7ON_3$, from benzoylacetonediazooanhydride (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 205.

$C_9H_{14}O_{12}N_4$, from $C_9H_{18}O_9N_4$, or from $C_{17}H_{40}O_{13}N_4$ (KLAGES), 1903, A., i, 469.

$C_9H_{12}O_4N$, and its amide, bromide, and chloride, from biscyanomethylpiperidium bromide (v. BRAUN), 1903, A., i, 603.

$C_9H_{18}O_9N_4$, from the hydrolysis of $C_{17}H_{40}O_{13}N_4$ (KLAGES), 1903, A., i, 469.

$C_{10}H_6O_4$, from the hydrolysis of ethyl coumarinketoacetate (KNOEVENAGEL and LANGENSIEPEN), 1905, A., i, 64.

$C_{10}H_{10}O_3$, and its salts and esters, from ethyl 1-methylcyclohexenylidene-3-cyanoacetate (KNOEVENAGEL and MOTTEK), 1905, A., i, 62.

$C_{10}H_{10}O_4$, from *Cluytia similis* (TUTIN and CLEWER), 1912, T., 2223; P., 265.

$C_{10}H_{16}O_5$, from oxidation of sparteilene (MOUREU and VALEUR), 1912, A., i, 210.

$C_{10}H_{11}O_3$, from the action of hydrobromic acid on ethoxyphenylpropionic acid (MICHAEL and LAMB), 1907, A., i, 135.

$C_{10}H_{14}O_2$, and its sodium salt, from bromoisocamphenilanic acid (HENDERSON and HEILBRON), 1911, T., 1894; P., 249.

$C_{10}H_{14}O_2$, from limonene (HENDERSON), 1907, T., 1874; P., 247.

$C_{10}H_{14}O_2$, from the substance $C_{10}H_{14}O$, from β -terpineol (WALLACH and SCHMITZ), 1906, A., i, 372.

$C_{10}H_{14}O_2$, and its salts, from laurel leaves (THOMS and MOLLE), 1904, A., i, 606.

$C_{10}H_{14}O_3$, and its silver salt, from pinene (HENDERSON and HEILBRON), 1908, T., 291; P., 31.

$C_{10}H_{14}O_3$, and its isomeride, from camphene glycol (MOYCHO and ZIENKOWSKI), 1905, A., i, 711.

$C_{10}H_{14}O_3$, and $C_{10}H_{16}O_4$, from the oxidation of camphene (WAGNER, MOYCHO, and ZIENKOWSKI), 1904, A., i, 438.

$C_{10}H_{14}O_3$, $C_{10}H_{16}O_4$, and $C_{10}H_{18}O_3$, from diosphenol (SEMMLER and McKENZIE), 1906, A., i, 373.

Acid, $C_{10}H_{14}O_4$, and its esters and salts, obtained in the preparation of ethyl teraconate (STOLLÉ), 1903, A., i, 317.

$C_{10}H_{14}O_4$ (two), from ethyl Δ^1 -cycloheptenecarboxylate (BUCHNER and SCHEDA), 1904, A., i, 412.

$C_{10}H_{14}O_4$, from the oxidation of 4:5-dimethoxy-2-methylbenzaldehyde (GATTERMANN), 1903, A., i, 34.

$C_{10}H_{15}O_2$, from Manila copal (RICHMOND), 1910, A., i, 691.

$C_{10}H_{16}O_2$, and its dibromide, from ginger grass oil (WALBAUM and HÜTHIG), 1905, A., i, 603.

$C_{10}H_{16}O_2$, and its amide and esters, from the sodium derivative of butyrolin and of isobutyrolin (BOUVEAULT and LOCQUIN), 1910, A., i, 93.

$C_{10}H_{16}O_2$, and its metallic salts, from the oxidation of pinene (HENDERSON, GRAY, and SMITH), 1903, T., 1303; P., 196.

$C_{10}H_{16}O_2$, and its methyl ester and amide, from the condensation of the sodium derivative of acetoin with ethyl acetate (BOUVEAULT and LOCQUIN), 1907, A., i, 479.

$C_{10}H_{16}O_2$ (two), from the glycol from camphene (MILOBENDZKI), 1908, A., i, 93.

$C_{10}H_{16}O_3$, and its chloride, and their bromo-derivatives, from pinene (HENDERSON and HEILBRON), 1908, T., 290; P., 31.

$C_{10}H_{16}O_3$, and its salts, from the oxidation of β -pinene (WALLACH), 1907, A., i, 1059.

$C_{10}H_{16}O_3$, and $C_{10}H_{16}O_4$, from the oxidation of pinocampheol (WALLACH and ENGELBRECHT), 1906, A., i, 634.

$C_{10}H_{16}O_3$, from oxidation of caryophyllene, and its semicarbazone (DEUSEN), 1909, A., i, 171.

$C_{10}H_{16}O_4$, from the terpene from *l*-pinocampheol (GILDEMEISTER and KÖHLER), 1910, A., i, 181.

$C_{10}H_{16}O_5$, from the action of light on camphor (CIAMICIAN and SILBER), 1910, A., i, 496.

$C_{10}H_{16}O_6$, from the hydrolysis of ethyl 1:1:3-trimethyl-1-cyclopentanone-2:3-dicarboxylate (PERKIN and THORPE), 1906, T., 787.

$C_{10}H_{18}O_6$, from the oxidation of *aaa'*-tetramethyldihydromuconic acid (BONE and HENSTOCK), 1903, T., 1386; P., 243.

$C_{10}H_{18}O_6$ (two), and their lactones, from the oxidation of the terpeneol of majorana oil (WALLACH and BOEDECKER), 1907, A., i, 228, 994.

Acid, $C_{10}H_{20}O_2$, from oxidation of α -phytol, and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), 1911, A., i, 149.

$C_{10}H_{20}O_4$, from the oxidation of the oxide $C_{10}H_{20}O$, and the hydrocarbon $C_{10}H_{18}$ (SAMEC), 1907, A., i, 746.

$C_{10}H_7O_2Br$, from cyclohexene-*n*-butyric acid (WALLACH, CHURCHILL, and RENTSCHLER), 1908, A., i, 405.

$C_{10}H_7O_3N$, from $C_{11}H_9O_3N$, and hydriodic acid (TRÖGER and KROSEBERG), 1912, A., i, 896.

$C_{10}H_8O_4N_2$, from the hydrazone of xanthophanic acid methyl and ethyl ethers (LIEBERMANN and LINDENBAUM), 1907, A., i, 890.

$C_{10}H_{11}O_5N$, and its benzoyl derivative, from the reduction of methyl *o*-nitro-*p*-carboxyphenoxyacetamide (EINHORN and RUPPERT), 1903, A., i, 260.

$C_{11}H_{10}O_5$, from oxidation of ethyl α -cyanocinnamylideneacetate (REEMER), 1911, A., i, 448.

$C_{11}H_{10}O_5$, from yangonol (WINZHEIMER), 1908, A., i, 805.

$C_{11}H_{12}O_3$, and its salts, from ethyl 1:5-dimethylcyclohexenylidene-3-cyanoacetate (KNOEVENAGEL and MOTTEK), 1905, A., i, 62.

$C_{11}H_{14}O_4$, ethyl ester, from the action of zinc and ethyl α -bromopropionate on anisaldehyde (WALLACH and EVANS), 1907, A., i, 1061.

$C_{11}H_{16}O_2$, and its silver salt, from nopinone (WALLACH), 1907, A., i, 1058.

$C_{11}H_{16}O_2$, and its silver salt, from the action of zinc and ethyl bromoacetate on sabinaketone (WALLACH), 1907, A., i, 1060.

$C_{11}H_{16}O_3$ (two), from the nitrile from carvone and hydrogen cyanide (HANN and LAPWORTH), 1904, P., 54.

$C_{11}H_{16}O_8$, from the oxidation of santonic acid (ANGELI and MARINO), 1907, A., i, 321.

$C_{11}H_{18}O_2$, from pinene (HOUBEN and KESSELKAUL), 1903, A., i, 42.

$C_{11}H_{18}O_3$, from electrolytic reduction of camphorcarboxylic acid, and its calcium salt (BREDT and SANDKUHL), 1909, A., i, 499.

$C_{11}H_{18}O_5$, and its salts, from the oxidation of hexylaticonic acid (FITIG and SIMON), 1904, A., i, 554.

$C_{11}H_9O_3N_2$, and its silver salt, from the oxidation of 1-phenyl-5-pyridazinone-4-carboxylic acid (WISLICENUS, BÖKLEN, and REUTHE), 1909, A., i, 10.

Acid, $C_{11}H_9O_3N$, and its ethyl ester, from 2-methylindole and ethyl oxalate (ANGELI and MARCHETTI), 1908, A., i, 207.

$C_{11}H_9O_3N$ ($+2H_2O$), from oxidation of galipine sulphate (TRÖGER and KROSEBERG), 1912, A., i, 896.

$C_{11}H_9O_4N$, from α -carbethoxy- β -keto- γ -phenylbutyrolactam and sodium hydroxide, and an isomeride of (ANSCHÜTZ and BÖCKER), 1909, A., i, 730.

$C_{11}H_9O_5N$, and its salts, from tribromo- β -phthaliminopropylene (GABRIEL), 1911, A., i, 982.

$C_{11}H_9O_7N$, from the hydrolysis of ethyl phthaliminomalonate (SÖRENSEN), 1903, A., i, 833.

$C_{11}H_{11}O_3N_3$ ($+H_2O$), from methyl 5-ethoxyphenyl-1:2:3-triazole-4-carboxylate (DIMROTH and EBERHARDT), 1905, A., i, 99.

$C_{11}H_9O_6NCl_2$, from 5:6-dichloroanthranilic diformalide ethyl ether, and dinitrile of (VILLIGER), 1909, A., i, 931.

$C_{12}H_{12}O_7$, and its silver salt, from picrotin (ANGELICO), 1911, A., i, 1004.

$C_{12}H_{14}O_3$, from the action of zinc on a mixture of cinnamaldehyde and ethyl α -bromopropionate (BAIDAKOWSKY), 1906, A., i, 178.

$C_{12}H_{14}O_4$, from oxidation of curcumone (RUPE and STEINBACH), 1911, A., i, 69.

$C_{12}H_{14}O_4$, from turmeric oil (RUPE), 1908, A., i, 95.

$C_{12}H_{16}O_2$, from turmeric oil (RUPE), 1908, A., i, 95.

$C_{12}H_{16}O_3$, from oxidation of curcumone (RUPE and STEINBACH), 1911, A., i, 69.

$C_{12}H_{16}O_4$, and $C_{12}H_{17}O_3N$, from the cyanohydrin from carvone and hydrogen cyanide (HANN and LAPWORTH), 1904, P., 54.

$C_{12}H_{16}O_4$ ($+H_2O$), and its salts, from aldol and malonic acid in quinoline (RIEDEL), 1908, A., i, 501.

$C_{12}H_{16}O_6$, from elemi oil (SCHIMMEL & Co.), 1907, A., i, 782.

$C_{12}H_{16}O_6$, tribasic, from oxidation of an acid from oxidation of cholic acid (PANZER), 1909, A., i, 586.

$C_{12}H_{20}O_2$, from linalyl bromide and ethyl sodiomalonate, and its ethyl ester (ROURE-BERTRAND FILS, DUPONT, and LABAUNE), 1911, A., i, 895.

Acid, $C_{12}H_{20}O_2$, and its methyl ester, from the sodium derivative of isovaleroin (BOUVEAULT and LOCQUIN), 1907, A., i, 480.

$C_{15}H_{26}O_2$, from cyclohexanone and potassium hydroxide, and its amide (WALLACH and BEHNKE), 1909, A., i, 813.

$C_{15}H_{26}O_2$, from dimethylcampholide (KOMPPA), 1908, A., i, 353.

$C_{15}H_{26}O_2$, from ϵ -hydroxy- ϵ -cyclohexylhexoic acid (WALLACH and OST), 1912, A., i, 568.

$C_{12}H_{22}O_3$, from the oxidation of 1-methyl-4-isopropyl-3-allylcyclohexan-3-ol, and its salts (SATTZEFF), 1911, A., i, 474.

$C_{12}H_{22}O_5$, from the oxidation of octaglycol isobutyrate (LESCH and MICHEL), 1905, A., i, 403.

$C_{12}H_{24}O_2$ (?), from *Suberites domuncula* (HENZE), 1904, A., i, 410.

$C_{12}H_{10}O_4N$, from the condensation of pyruvic acid with hippuric acid (ERLENMEYER and ARBENZ), 1905, A., i, 241.

$C_{12}H_{10}O_2N_2$, from the oxidation of the hydriodide of the compound, $C_{18}H_{13}N_3$ (ORTOLEVA), 1907, A., i, 730.

$C_{12}H_{12}O_7S$, ammonium and barium salts, from the action of ammonium sulphite on the lactone of β -iodo- γ -hydroxy- δ -3:4-methylenedioxy-phenylvaleric acid (BOUGAULT), 1908, A., i, 538.

$C_{12}H_{13}O_4N$, from the oxazole $C_{12}H_{11}O_3N$ (ERLENMEYER and BADE), 1905, A., i, 131.

$C_{12}H_{14}O_8N_2$, from the hydrolysis of $C_{16}H_{19}O_8N_3$ (SCHMITT), 1904, A., i, 481.

$C_{12}H_{18}O_8N_2$, and its lactam, from the reduction of ethyl $\beta\delta$ -di-imino- $\alpha\delta$ -dimethyldicarboxyadipate (TRAUBE), 1903, A., i, 76.

$C_{12}H_{26}O_{10}N_5$, and its salts, from the hydrolysis of gelatin (SKRAUP), 1905, A., i, 398.

$C_{12}H_{12}O_3N_4S$, from the action of sulphur dioxide on a diazobenzene salt (TRÖGER, HILLE, and VASTERLING), 1906, A., i, 120; (TRÖGER and FRANKE), 1906, A., i, 993; (TRÖGER, BERLIN, and FRANKE), 1906, A., i, 994.

$C_{13}H_{12}O_6$, and its methyl ester and tribromo-derivative, from the oxidation of bisdiphenylbutadiene (RIIBER), 1904, A., i, 569.

Acid, $C_{13}H_{12}O_6$, and its silver salt, from α -picrotinic acid (ANGELICO), 1910, A., i, 404.

$C_{13}H_{12}O_7$, and its silver salt, from α -picrotinic acid (ANGELICO), 1910, A., i, 405.

$C_{13}H_{14}O_3$, from phthalaldehydic acid and diethyl ketone (MORGENSTERN), 1909, A., i, 804.

$C_{13}H_{14}O_6$, from ethyl phenylisocrotonate and ethyl sodiomalonate (VORLÄNDER and STRUNCK), 1906, A., i, 366.

$C_{13}H_{14}O_6$, from oxidation of picrotoxin (BARGER and CLARKE), 1912, A., i, 1008.

$C_{13}H_{16}O_7$, from ethyl camphorylidene-cyanoacetate and hydrogen peroxide (FORSTER and WITHERS), 1911, P., 327; 1912, T., 1337.

$C_{13}H_{16}O_8$, and an isomeride from lactone ester $C_{17}H_{24}O_8$ (LEUCHS and MÖBIS), 1909, A., i, 362.

$C_{13}H_{18}O_3$, from the oil of nutmeg (POWER and SALWAY), 1907, T., 2056; 1907, P., 285.

$C_{13}H_{22}O_6$, from nopinolacetic acid and acetic anhydride (WALLACH), 1909, A., i, 727.

$C_{13}H_{24}O_2$, from dimethylanhydrovalolactone and magnesium methyl iodide (LOSANITSCH), 1911, A., i, 804.

$C_{13}H_9O_2N$, from iodo-magnesium derivative of carbazole (ODDO), 1911, A., i, 488.

$C_{13}H_{11}O_2N$, from iodo-magnesium derivative of diphenylamine and its salts (ODDO), 1911, A., i, 489.

$C_{13}H_{14}O_2N_2$, from phenylhydrazine and ethyl $\alpha\beta$ -diacetylpropionate (KORSCHUN), 1904, A., i, 615.

$C_{13}H_{17}O_6N$ (+ H_2O), from ethyl camphorylidene-cyanoacetate and hydrogen peroxide (FORSTER and WITHERS), 1911, P., 327.

$C_{13}H_{19}O_3N$, from dimethylketenpyridine (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.

$C_{14}H_{16}O_6$, from picrotin (ANGELICO), 1911, A., i, 1004.

$C_{14}H_{16}O_6$, from the acid $C_{15}H_{16}O_8$ (VORLÄNDER and STRUNCK), 1906, A., i, 367.

$C_{14}H_{16}O_6$, from the action of water on $C_{14}H_{14}O_5$ (FEIST and REUTER), 1910, A., i, 10.

$C_{14}H_{20}O_5$, from oxidation of caryophyllene, and its sodium salt (HAARMANN), 1909, A., i, 400.

- Acid**, $C_{14}H_{20}O_5$, two isomerides, from caryophyllene glycol (HAARMANN), 1910, A., i, 496.
- $C_{14}H_{24}O_2$, and its methyl ester, from the sodium derivative of hexonoin (BOUVEAULT and LOCQUIN), 1907, A., i, 480.
- $C_{14}H_{24}O_2$, and two isomerides, from 2-, 3-, and 4-methylcyclohexanone (WALLACH and BEHNKE), 1909, A., i, 813.
- $C_{14}H_{28}O_2$, from oxidation of α -phytol, and its silver salt (WILLSTÄTTER, MEYER, and HÜNI), 1911, A., i, 149.
- $C_{14}H_{12}O_3N_2$, from the reduction of o-nitrobenzyl alcohol (FREUNDLER), 1903, A., i, 372.
- $C_{14}H_{12}O_5S$, and its salts, from phenoxycetophenone (STOERMER and ATENSTÄDT), 1903, A., i, 41.
- $C_{14}H_{21}O_3N$, from the base, $C_{14}H_{19}O_2N$ (FOURNEAU), 1909, A., i, 51.
- $C_{14}H_{21}O_3N_3$, from the base $C_{14}H_{19}O_2N_3$ (PRAGER), 1903, A., i, 540.
- $C_{14}H_{14}O_5N_2S$, from 4-diazo-*m*-xylene-5-sulphonic acid and resorcinol (JUNGHAHN), 1903, A., i, 23.
- $C_{14}H_{16}O_3N_4S$, from the action of sulphur dioxide on diazo-*m*-toluene; (TRÖGER and HILLE), 1904, A., i, 118; (TRÖGER, HILLE, and VASTERLING), 1906, A., i, 120; (TRÖGER and SCHAUB; TRÖGER, WARNECKE, and SCHAUB), 1906, A., i, 993.
- $C_{15}H_{16}O_8$, from α -picrotinic acid (ANGELICO), 1910, A., i, 404.
- $C_{15}H_{16}O_8$, from ethyl $\alpha\beta$ -hydropiperate and ethyl sodiomalonate (VORLÄNDER and STRUNCK), 1906, A., i, 367.
- $C_{15}H_{16}O_{10}$, product from the preparation of ethyl phloroglucinoldicarboxylate (LEUCHS and SIMON), 1911, A., i, 646.
- $C_{15}H_{18}O_4$, and its silver salt (ANGELICO), 1910, A., i, 404.
- $C_{15}H_{20}O_7$, from the oxidation of santonin acid (ANGELI and MARINO), 1907, A., i, 321.
- $C_{15}H_{22}O_9$, from the action of alkali on picrotin (HORRMANN and SEYDEL), 1912, A., i, 1009.
- $C_{15}H_{28}O_2$, and its lead salt and dibromide, *Eriodictyon glutinosum* (MOSSLER), 1907, A., ii, 292.
- $C_{15}H_{14}O_4N_2$, (+ $2H_2O$), from ethyl chlorodimethylnicotinate and hydrazinobenzoic acid (MICHAELIS and REINIGHAUS), 1909, A., i, 531.
- Acid**, $C_{15}H_{15}O_9N$, from the hydrolysis of ethyl γ -cyanopropylphthalimino-malonate (SÖRENSEN), 1903, A., i, 834.
- $C_{16}H_{14}O_3$, and its dibromide, from α -oxydiphenylbutyrolactone, constitution of (ERLENMEYER and ARBENZ), 1903, A., i, 418; 1904, A., i, 1015.
- $C_{16}H_{14}O_4$, from ethyl benzylidenedioxyphenylpropionate (DIECKMANN), 1910, A., i, 385.
- $C_{16}H_{24}O_3$, and $C_{16}H_{24}O_4$, and their salts, from the oxidation of abietic acid (ENDEMANN), 1905, A., i, 526.
- $C_{16}H_{26}O_5$, from peat wax (ZALOZIECKI and HAUSMANN), 1907, A., i, 674.
- $C_{16}H_{30}O_3$, and its methyl ester, from cod liver oil (BULL), 1906, A., i, 925.
- $C_{16}H_{12}O_3N_2$, from indirubin and sodium hydroxide, and its sodium salt (FRIEDLÄNDER and SCHWENK), 1910, A., i, 592.
- $C_{16}H_{23}O_3N$, from 2:4-diketo-6-phenyl-1:3:3:5:5-pentamethylpiperidine, and its methyl ester (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 588.
- $C_{16}H_9O_3N_4Cl_4$, from 2:5-dichlorophenyl hydrazine (NOELTING and KOPP), 1905, A., i, 872.
- $C_{17}H_{14}O_3$, and its esters and silver salt, from the oxidation of dimethylcyclopentanone (VORLÄNDER and SIEBERT), 1905, A., i, 793.
- $C_{17}H_{14}O_5$, from the hydroxylactone from phenylpyruvic acid and piperonaldehyde (ERLENMEYER and BRAUN), 1904, A., i, 1017.
- $C_{17}H_{14}O_5$, from the lactone of 8-hydroxy-3:4-dimethoxyphenanthrene-9-carboxylic acid (PSCHORE and POPOVICI), 1906, A., i, 851.
- $C_{17}H_{16}O_3$, and its ethyl ester, from benzaldehyde and ethyl succinate (STOBBE and NAOUM), 1904, A., i, 589.
- $C_{17}H_{16}O_3$, from α -oxy- β -phenyl- γ -benzylbutyrolactone (ERLENMEYER and REIS), 1904, A., i, 1018.
- $C_{17}H_{16}O_4$, and its lactones, from α -oxy- β -phenyl- γ -methoxyphenylbutyrolactone (ERLENMEYER and LATTERMANN), 1904, A., i, 1018.
- $C_{17}H_{16}O_4$, and its derivatives, from rotlerin (HERRMANN), 1908, A., i, 99.
- $C_{17}H_{18}O_2$, from the action of potassium hydroxide on the substance, $C_{24}H_{22}O$ (BAUER and BREIT), 1906, A., i, 517.

Acid, $C_{17}H_{18}O_2$, and its derivatives, from oxidation of $C_{17}H_{18}$ (RAMART-LUCAS), 1912, A., i, 556.

$C_{17}H_{22}O_4$, from the reduction of δ -cumyl- α -dimethylfulgenic acid and its isomeride (STOBBE and LEUNER), 1906, A., i, 23.

$C_{17}H_{22}O_2$, from cod-liver oil (HEIDUSCHKA and RHEINBERGER), 1911, A., i, 766.

$C_{17}H_{30}O_4$, and $C_{17}H_{30}O_5$, from the oxidation of chaulmoogric acid (POWER and GORNALL), 1904, T., 860; P., 137.

$C_{17}H_{34}O_2$, from the aldehyde $C_{17}H_{34}O$, from α -hydroxystearic acid (LE SEUR), 1904, P., 14.

$C_{17}H_{18}O_3N$, from 2-methylindole and phthalic anhydride (RENZ), 1904, A., i, 534.

$C_{17}H_{21}O_3N$, from dimethylketenquinoline (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.

$C_{17}H_{21}O_3N$, from dimethylketenisoquinoline (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.

$C_{17}H_{40}O_{13}N_4$ (ethyl ester), from methyleneaminoacetonitrile (KLÄGES), 1903, A., i, 469.

$C_{17}H_{23}O_2N_2P$, from Michler's ketone and hypophosphorous acid (FOSSE), 1910, A., i, 292.

$C_{18}H_{10}O_6$, from naphthacenediquinone (VOSWINCKEL), 1906, A., i, 99.

$C_{18}H_{12}O_6$, (+ $2H_2O$), from compound, $C_{16}H_{12}O_6$, from bisdiketohydrindene (VOSWINCKEL), 1909, A., i, 166.

$C_{18}H_{16}O_4$, and its methyl ester, from oxidation of ethyl α -cyanocinnamylideneacetate (REIMER), 1911, A., i, 448.

$C_{18}H_{18}O_4$, from phenylpropionic acid and benzophenone (PATERNO and CHIEFFI), 1911, A., i, 65.

$C_{18}H_{28}O_2$, from cyclohexanone and potassium hydroxide (WALLACH and BEHNKE), 1909, A., i, 813.

$C_{18}H_{23}O_8$, from diethyl ester of acid $C_{16}H_{23}O_{10}$, from cholic acid, and diethyl ester of (LETSCHÉ), 1909, A., i, 698.

$C_{18}H_{32}O_2$, from di-iodostearic acid and potassium hydroxide, and its barium and silver salts (CHONOWSKY), 1909, A., i, 760.

$C_{18}H_{32}O_6$, from oleic acid (MOLINARI and SONCINI), 1906, A., i, 792.

$C_{18}H_{32}O_6$, from triolein ozonide (MOLINARI and FENAROLI), 1908, A., i, 849; (MOLINARI and BAROSI), 1908, A., i, 850.

Acid, $C_{18}H_{34}O_2$, analogous to elaidic acid, from petroselic acid (VONGERICHTEN and KÖHLER), 1909, A., i, 454.

$C_{18}H_{13}O_2N$, ethyl ester, from ethyl α -cyanocinnamate and magnesium phenylacetylene bromide (KÖHLER and REIMER), 1905, A., i, 348.

$C_{18}H_{15}O_7N$, from oxidation of corycavinemethine (GAEBEL), 1910, A., i, 502.

$C_{18}H_{17}O_{13}N$, from the preparation of nitrogallie acid trimethyl ether (HARDING), 1911, T., 1595.

$C_{18}H_{15}O_6N$, acetyl derivative and sodium salt, from *o*-methoxybenzaldehyde and glycine (ERLENMEYER and BADE), 1905, A., i, 131.

$C_{18}H_{16}O_4N_2S$, and its sodium salt, from 4-diazo-*m*-xylene-5-sulphonic acid and β -naphthol (JUNGAHN), 1903, A., i, 22.

$C_{18}H_{18}O_2$, from 1:4:5-trihydroxy-4:5-diphenyl-1:3-dimethylcyclopentan-2-one (JAPP and MICHIE), 1903, T., 302.

$C_{18}H_{15}O_4$, from the action of magnesium benzyl chloride on methyl cinnamylidenemalonate (REIMER), 1907, A., i, 853.

$C_{19}H_{18}O_6$, and $C_{19}H_{20}O_6$, salts, from the condensation of benzaldehyde with itaconic acid (FITTIG and BOCK), 1904, A., i, 745.

$C_{19}H_{20}O_3$, from α -hydroxy- β -phenyl- γ -isopropylphenylbutyrolactone (ERLENMEYER), 1903, A., i, 419; (ERLENMEYER and KEHREN), 1904, A., i, 1016.

$C_{19}H_{28}O_{10}$, from cholic acid and nitric and sulphuric acids, and its diethyl ester, and metallic salts (LETSCHÉ), 1909, A., i, 697.

$C_{19}H_{32}O_{12}$, from diethyl ester of acid $C_{19}H_{23}O_{10}$, from cholic acid, and anhydride, and ammonium and silver salts of (LETSCHÉ), 1909, A., i, 698.

$C_{19}H_{15}O_5N$, and its ethyl ester, from the oxidation of ethyl 2:6-diphenylpiperidone-3:5-dicarboxylate (PETRENKO-KRITSCHENKO and PETROFF), 1908, A., i, 565.

$C_{19}H_{18}O_3N_2$, from phenylhydrazine and α -ethylphenacylmalonic acid (EYKMAN), 1904, A., i, 590.

$C_{19}H_{20}O_4N_2$, and its diphenylhydrazine salt, from phenylhydrazine and β -ethylphenacylmalonic acid (EYKMAN), 1904, A., i, 590.

- Acid**, $C_{19}H_{22}O_6N_2$, from cacothelin, and its salts (CIUSA and SCAGLIARINI), 1911, A., i, 155.
- $C_{20}H_{18}O_8$, and its ester and diacetyl derivative from benzaldehyde and citric acid (MAYRHOFER and NEMETH), 1903, A., i, 344.
- $C_{20}H_{20}O_6$, and its salts and esters, from the condensation product of acetone and *p*-cresol (ZINCKE and GAEBEL), 1912, A., i, 443.
- $C_{20}H_{20}O_6$, from benzylpyruvic acid (BOUGAULT), 1912, A., i, 771.
- $C_{20}H_{20}O_6$ ($+ \frac{1}{2}H_2O$), from the alkaline hydrolysis of α -hydroxy- γ -phenylcrotonamide (BOUGAULT), 1912, A., i, 771.
- $C_{20}H_{22}O_5$, from ethyl β -phenylmethylhydracrylate (SCHROETER), 1907, A., i, 530.
- $C_{20}H_{22}O_4$, from oxidation of a hydrocarbon $C_{10}H_{20}$ from petroleum (CHARITSCHKOFF), 1909, A., i, 896.
- $C_{20}H_{28}O_{10}$, from the interaction of methylene chloride and the sodium derivative of ethyl malonate (TUTIN), T., 1145; P., 158.
- $C_{20}H_{26}O_{12}$, from ethyl 2:4-dicarboxydicyclo-0:1:1-butane-1:3-dimalonate, and its sodium derivative (GUTHZEIT and HARTMANN), 1910, A., i, 389.
- $C_{20}H_{32}O_3$, and its ethyl ester, from cholesterol (DIELS and ABDERHALDEN), 1903, A., i, 819.
- $C_{20}H_{32}O_3$, from cholesterol. See Acid $C_{27}H_{44}O_4$.
- $C_{20}H_{34}O_9$, from the oxidation of phytol (WILLSTÄTTER and HOCHEDER), 1907, A., i, 786.
- $C_{20}H_{17}O_3N$, from the alkaline hydrolysis of α -hydroxy- γ -phenylcrotonamide (BOUGAULT), 1912, A., i, 771.
- $C_{20}H_{25}O_4N_3$, from ϵ -benzoyl-lysine and phenylcarbimide (v. BRAUN), 1909, A., i, 230.
- $C_{20}H_{24}O_3N_2$, from new alkaloid of *Pseudocinchona africana*, and its silver salt (FOURNEAU), 1910, A., i, 501.
- $C_{21}H_{17}O_3$, from cyanoacetic acid and *p*-methoxyphenyl- α -naphthylcarbinol (FOSSE), 1906, A., i, 976.
- $C_{21}H_{30}O_8$, and its salts, from the acid, $C_{25}H_{40}O_6$ (WINDAUS), 1908, A., i, 728.
- $C_{21}H_{34}O_2$, from 3-methylcyclohexanone (WALLACH and BEHNKE), 1909, A., i, 813.
- Acid**, $C_{21}H_{35}O_7$, from peat wax (ZALOZIECKI and HAUSMANN), 1907, A., i, 675.
- $C_{21}H_{40}O_4$, from oleic or elaidic acid and formaldehyde, and its derivatives (FOKIN), 1911, A., i, 765.
- $C_{21}H_{15}O_3N_2$, from the substance $C_{23}H_{24}O_4N_2$ (KNOEVENAGEL and HEEREN), 1903, A., i, 660.
- $C_{21}H_{23}O_3N$, from dimethylketen- β -naphthaquinoline (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.
- $C_{22}H_{16}O_7$, and its salts, from tri-*p*-tolylcarbinol (TOUSLEY and GOMBERG), 1905, A., i, 44.
- $C_{22}H_{20}O_4$, from $\alpha\theta$ -diphenyloctane and oxalyl chloride, and its derivatives (v. BRAUN and DEUTSCH), 1912, A., i, 688.
- $C_{22}H_{32}O_8$, from cholesterol (WINDAUS), 1908, A., i, 728.
- $C_{22}H_{32}O_8$, from oxidation of acid $C_{25}H_{40}O_6$ from cholesterol, and its rubidium hydrogen, and caesium hydrogen salts (WINDAUS), 1909, A., i, 920.
- $C_{22}H_{34}O_4$, from Manila copal (RICHMOND), 1910, A., i, 691.
- $C_{22}H_{16}O_3N_2$, from indigotin and magnesium phenyl bromide (SACHS and KANTOROWICZ), 1909, A., i, 425.
- $C_{22}H_{30}O_{10}N_2$, from the hydrolysis of ethyl phthalimino- γ -phthalimino-propylmalonate (SÖRENSEN), 1903, A., i, 834.
- $C_{22}H_{21}O_2N_3$, from action of aniline on benzoylacrylic acid and condensation of product with phenylhydrazine (BOUGAULT), 1909, A., i, 102.
- $C_{23}H_{36}O_3$, and its semicarbazone from degradation products of cholesterol (WINDAUS), 1912, A., i, 450.
- $C_{23}H_{40}O_5$, from oleic or elaidic acid and formaldehyde, and its acetyl derivative (FOKIN), 1911, A., i, 765.
- $C_{23}H_{46}O_2$, from olive leaves (POWER and TUTIN), 1908, T., 894; P., 117.
- $C_{23}H_{24}O_9N_2$, from oxidation of brucinolone acetate, and its derivatives (LEUCHS and BREWSTER), 1912, A., i, 211.
- $C_{23}H_{20}O_{12}N_3$, from the action of nitric acid in acetic acid on cannabinol (CZERKIS), 1907, A., i, 331.

Acid, $C_{26}H_{19}O_7$, from action of alkali on 6-acetoxy-6:11-(1'-)-trihydroxy-11-phenyldihydronaphthacenequinone, and its acetyl and tetramethyl derivatives (VOSWINCKEL), 1909, A., i, 167.

$C_{24}H_{34}O_4$, from oxidation of a decanaphthene from petroleum (CHARITSCHKOFF), 1909, A., i, 896.

$C_{24}H_{34}O_4$, from oxidation of naphtha (CHARITSCHKOFF), 1909, A., i, 471.

$C_{24}H_{34}O_{16}$, and its copper and barium salts and sodium derivative (GUTH-ZEIT and HARTMANN), 1910, A., i, 387.

$C_{24}H_{38}O_6$, and its sodium salt, from degradation products of cholesterol (WINDAUS), 1912, A., i, 450.

$C_{25}H_{40}O_8$, and its esters and salts, from cholesterol (WINDAUS), 1908, A., i, 264, 728.

$C_{25}H_{46}O_{29}$, and its ethyl ester, from olive bark (POWER and TUTIN), 1908, T., 907; P., 117.

$C_{26}H_{37}O_{12}N_3$, and its salts, from the acid, $C_{25}H_{40}O_6$ and nitric and acetic acids (WINDAUS), 1908, A., i, 728.

$C_{26}H_{20}O_2$, from diphenylphenanthrone (ACREE), 1905, A., i, 216.

$C_{26}H_{22}O_6$, from 55-diphenyl- α -styrylfulgenic acid (STOBBE, BENARY, and SEYDEL), 1911, A., i, 380.

$C_{26}H_{26}O_9$, from cyclohexanone and opianic acid (MORGENSTERN), 1909, A., i, 803.

$C_{26}H_{38}O_6$, and its silver salt, from onocerin (v. HEMMELMAYR), 1908, A., i, 185.

$C_{26}H_{40}O_7$, from oxidation of cholesterol, and its potassium hydrogen salt (WINDAUS), 1909, A., i, 920.

$C_{26}H_{40}O_7$, from oxidation of digitogenic acid, and its magnesium salt (KILIANI), 1911, A., i, 139.

$C_{26}H_{42}O_6$, from the oxidation of the keto-acid, $C_{26}H_{42}O_8$, from cholestenone (WINDAUS), 1906, A., i, 580; (DO-REE and GARDNER), 1908, T., 1331.

$C_{26}H_{44}O_4$, and its silver salt, from the oxidation of cholesterol (PICKARD and YATES), 1908, T., 1686; P., 121.

$C_{26}H_{52}O_3$, from pumpkin seed, and its ethyl ester (POWER and SALWAY), 1910, A., ii, 339.

$C_{26}H_{22}O_4N$, and its salts, from the substance, $C_{26}H_{22}O_3N$ (AVERY and McDOLLE), 1908, A., i, 344.

$C_{27}H_{14}O_4$, from the interaction of sulphuric acid and 1:3:5-triphenylbenzene-2':2'':2'''-tricarboxylic acid (ERRERA), 1908, A., i, 185.

Acid, $C_{27}H_{40}O_5$, $C_{27}H_{40}O_8$, and $C_{27}H_{42}O_5$, and their esters and salts, from cholesterol (WINDAUS), 1908, A., i, 264.

$C_{27}H_{42}O_5$, and its dimethyl esters and its oxime, from dehydrositostanedi-one (PICKARD and YATES), 1908, T., 1932; P., 228.

$C_{27}H_{42}O_8$, from cholesterol (WINDAUS), 1905, A., i, 128.

$C_{27}H_{42}O_8$, $C_{27}H_{43}O_3Cl$, and $C_{27}H_{44}O_5$, from cholesterol (WINDAUS and STEIN), 1904, A., i, 1010.

$C_{27}H_{44}O_4$, from cholesterol (WINDAUS), 1906, A., i, 580.

$C_{27}H_{44}O_4$, from the oxidation of cholestenone (WINDAUS), 1906, A., i, 579.

$C_{27}H_{44}O_4$, and its salts and esters, from cholesterol (DIELS and ABDERHALDEN), 1904, A., i, 880.

$C_{27}H_{46}O_3$, and its ethyl ester and acetyl derivative, from the oxidation of cholesterol (PICKARD and YATES), 1908, T., 1685; P., 121.

$C_{27}H_{25}O_3N$, from phenylmethylketen-quinoline (STAUDINGER and RUŽIČKA), 1911, A., i, 464.

$C_{28}H_{42}O_{11}$, from oxidation of digitogenic acid, and its barium salt (KILIANI), 1911, A., i, 139.

$C_{30}H_{58}O_2$, and its ethyl ester, from olive bark (POWER and TUTIN), 1908, T., 912; P., 118.

$C_{30}H_{21}O_3N_6$, and its salts and esters, from the ethyl ester of the acid $C_4H_4O_3N_2$ and aniline (FRERICHS and HARTWIG), 1906, A., i, 163.

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$C_{32}H_{38}O_{20}$, and its potassium and sodium salts, from the hydrolysis of the insoluble substance from the interaction of methylene chloride and the sodium derivative of ethyl malonate (TUTIN), 1907, T., 1145; P., 158.

$C_{32}H_{50}O_4$, from Manila copal (RICHMOND), 1910, A., i, 691.

$C_{32}H_{28}O_5N_2$, and its salts and lactone, from *o*-benzoylaminocinnamaldehyde (REISSERT), 1905, A., i, 926.

$C_{33}H_{30}O_3N_6$ (three), from the ethyl ester of the acid, $C_4H_4O_3N_2$, and *m*- and *p*-toluidines and methylaniline (FRERICHS and HARTWIG), 1906, A., i, 164.

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$C_{35}H_{68}O_2$, and its ethyl ester and salts, from olive bark (POWER and TUTIN), 1908, T., 906; P., 117.

$C_{35}H_{70}O_2$, and its ethyl ester and salts, from olive bark (POWER and TUTIN), 1908, T., 910; P., 118.

$C_{40}H_{70}O_5$, from leaves of *Betula alba* (GRASSER and PURKERT), 1910, A., ii, 440.

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$C_{41}H_{70}O_7$, from leaves of *Betula alba*, and its potassium salt (GRASSER and PURKERT), 1910, A., ii, 440.

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- Acridyl sulphide** (*acridylthiolacridol*) and its salts (EDINGER and RITSEMA), 1903, A., i, 720.
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- Acrylic acid** and its methyl ester, action of nitrogen peroxide on (EGOROFF), 1903, A., i, 789.
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$C_{10}H_{20}O$, and its acetate, from decane- α -diol (ALBERTI and SMIECIUSZEWSKI), 1906, A., i, 619.

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$C_{10}H_{20}O$, from oil of *Rhizoma imperatoria* (LANGE), 1912, A., i, 371.

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$C_{11}H_{24}O_7$, from the oxidation of diallylcrotonylcarbinol (REFORMATSKY), 1909, A., i, 4.

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$C_{15}H_{24}O_4$, from rhizome of *Cimicifuga racemosa* (FINNEMORE), 1910, A., ii, 801.

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$C_{20}H_{26}O_2$, from the action of magnesium ethyl bromide on *oo'*-diacetophenone (ZINCKE and TROPP), 1909, A., i, 35.

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$C_{20}H_{42}O$, and its acetate and benzoate, from *Raphia ruffia* of Madagascar (HALLER), 1907, A., i, 377.

$C_{22}H_{22}O$, from diphenylacetophenone (KOHLE), 1906, A., i, 754.

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$C_{32}H_{34}O_2$, and its acetate, from the action of magnesium ethyl bromide on *oo'*-dideoxybenzoin (ZINCKE and TROPP), 1909, A., i, 36.

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- Aldehydes, unsaturated**, reaction of, with magnesium organic compounds (KÖHLER), 1907, A., i, 1050.
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γ -Aldehyde-acids (BLAISE and COURTOT), 1906, A., i, 927.

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γ -Aldehydobutyric acid and its phenylhydrazone (ELLINGER), 1905, A., i, 828.

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***o*-Aldehyde-*p*-cresotic acid** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 321.

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- β -Aldehydo-esters** (BLAISE and MARCILLY), 1904, A., i, 285.
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- α -Aldehydo-*n*-nonoic acid**, methyl ester and its semicarbazone (HARDING, WALSH, and WEIZMANN), 1911, T., 451.
- ζ -Aldehydo- β -iso-octoic acid**, ethyl ester (HARDING, HAWORTH, and PERKIN), 1908, T., 1968.
- α -o-Aldehydophenoxypropionic acid** and its ethyl ester (AUWERS), 1912, A., i, 1010.
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- 4-Aldehydophenyl sulphide**, 2-nitro- (*nitro-benzaldehyde sulphide*) (KRÄNZLEIN), 1910, A., i, 390.
- 2-o-Aldehydophenyl-3-indone**, and its dibromide (THIELE and WEITZ), 1910, A., i, 855.
- α -Aldehydophenylnitrosohydroxylamine** and metallic derivatives of, and *p*-nitrophenylhydrazone of (BAMBERGER and LUBLIN), 1909, A., i, 509.
- p*-Aldehydophenyl-*p*-tolylidonium** hydroxide and its salts and derivatives (WILLGERODT and UCKE), 1912, A., i, 774.
- α -Aldehydophenyltrimethylammonium iodide** (BAMBERGER), 1904, A., i, 422.
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- β -Aldehydopropionic acid** (HARRIES), 1912, A., i, 827.
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- β -Aldehydopropionylphenylhydrazide** diphenyldihydrotetrazone, phenylhydrazone of, and the *p*-bromo-derivative of the hydrazone (FICHTER and GUGGENHEIM), 1908, A., i, 105.
- β -Aldehydopropionyl-*p*-tolylhydrazone**, *p*-tolylhydrazone and di-*p*-tolylidihydrotetrazone of (FICHTER and GUGGENHEIM), 1908, A., i, 106.
- 2-Aldehydoquinoline**, oxime of, and its acetate (PFITZINGER), 1903, A., i, 53.
- α -Aldehydosalicylic acid**, *p*-chloro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 321.
- 3-Aldehydosalicylic acid**, ethyl ester and phenylhydrazone, and 5-nitro- (REMFERY), 1911, T., 286; P., 21.
- 5-Aldehydosalicylic acid** and its ethyl ester, and their phenylhydrazones and 3-nitro-, and its ethyl ester (REMFERY), 1911, T., 286; P., 21.
- α -Aldehydosuccinanic acid** (PERKIN and ROBINSON), 1912, P., 155.
- 4-Aldehydo-*o*(or *m*)-tolylacetic acid**, ethyl ester and semicarbazones (AUWERS), 1911, A., i, 298.
- 2-Aldehydo-*p*-tolylloxyacetic acid** and its ethyl ester (AUWERS), 1912, A., i, 1010.
- α -2-Aldehydo-*p*-tolylloxypropionic acid** and its derivatives (AUWERS), 1912, A., i, 1011.
- 3-Aldehydotriphenylacetic acid**, 4-hydroxy-, salts and derivatives of (BISTRZYCKI and FELLMANN), 1910, A., i, 321; 1911, A., i, 133.
- 3-Aldehydotriphenylcarbinol**, 4-hydroxy-, derivatives of (BISTRZYCKI and FELLMANN), 1910, A., i, 321; 1911, A., i, 133.
- 8-Aldehydovaleric acid** and its *p*-nitrophenylhydrazone (HARRIES and v. SPLAWA NEYMANN), 1908, A., i, 968.
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- Alder bark**, estimation of the active principles of (WARIN), 1905, A., ii, 363, 659.
- Aldo-ketens** (STAUDINGER and KLEVER), 1908, A., i, 318.
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- Aldol**, $C_6H_{12}O_4$, and its diacetate, from ethoxyacetaldehyde and formaldehyde (KLÜGER), 1905, A., i, 684.
- $C_7H_{14}O_2$, from isovaleraldehyde and acetaldehyde (EHRENFREUND), 1905, A., i, 861.
- $C_7H_{14}O_3$, and its oxime and diacetyl-nitrile, from isovaleraldehyde and formaldehyde (LICHTENSTERN), 1905, A., i, 509.
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- tert.-Alkyl chlorides**, action of, on *p*-nitrophenol salts (SPIEGEL and KAUFMANN), 1906, A., i, 833.
- Alkylacetoacetic acids**, ethyl esters, preparation of (MICHAEL), 1905, A., i, 564.
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- α -Alkylacrylic acids**, esters (BLAISE and LUTTRINGER), 1905, A., i, 626.
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- Alkylaminoacetals** (PAAL and VAN GEMER), 1908, A., i, 511.
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- Alkylaminoanthrapyridones** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 263.
- Alkylaminoanthraquinones**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 498, 839; 1909, A., i, 310; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 243.
- nitro-derivatives of** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 361.
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- 5-Alkylamino-1-phenyl-3-methylpyrazole-4-azobenzenes** (MICHAELIS and KLOPSTOCK), 1907, A., i, 735.
- Alkylaminodithiocarbamic acids**, salts and esters of (FOURNEAU), 1911, A., i, 528; (FOURNEAU and VILA), 1912, A., i, 26.
- Alkylaminotoluic acids**, synthesis of (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 34.
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- 2-Alkylanilopyrines** (MICHAELIS, MIELECKE, and LUTZE), 1908, A., i, 61.
- N*-**Alkylanthranilic acids**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 50.
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- 2-Alkyldihydro-6-pyrimidones** (WHEELER and BRISTOL), 1905, A., i, 482.
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- 1-Alkylcyclohexan-2-one-1-carboxylic acids**, esters, influence of the alkyl groups on the synthesis and degradation of (KÖTZ, BIEBER, HESSE, and SCHWARZ), 1908, A., i, 24.
- Alkylhomonarcine and its alkyl ethers**, preparation of additive products of (KNOLL & Co.), 1907, A., i, 1070.
- Alkylhomonarcines** (TAMBACH and JÄGER), 1906, A., i, 879.
- α -Alkylhydraerylic acids** (BLAISE and LUTTRINGER), 1905, A., i, 505.
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- Alkylidenecyclohexadienes (alkylidenedihydrobenzenes)** (AUWERS), 1907, A., i, 399, 554.
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- Alkylidenecyclohexadienes** (*alkylidenedihydrobenzenes*), derivatives of, from *p*-cresol (AUWERS and HESSENLAND), 1907, A., i, 400.
- Alkylidenehydrazines**, catalytic decomposition of, as a method of preparation of hydrocarbons (KIJNER), 1911, A., i, 679, 1027; 1912, A., i, 213; (KIJNER and ZAVADOVSKY), 1911, A., i, 1028.
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- Alkylideneurethanes**, reaction between β -dicarboxylic compounds and (BIANCHI and SCHIFF), 1911, A., i, 977; (BIANCHI), 1912, A., i, 542.
- 2-Alkyliminopyrimidines**, preparation of (MERCK), 1907, A., i, 1088.
- Alkylkairolinium salts**, optical activity of (BUCKNEY and JONES), 1907, T., 1822; P., 234.
- N-Alkylketoximes** (SCHEIBER and WOLF), 1907, A., i, 1028; (SCHEIBER), 1908, A., i, 763; (SCHEIBER and BRANDT), 1908, A., i, 764.
- 1-Alkylutidones**, thio- and seleno-derivatives of (MICHAELIS and HOELKEN), 1904, A., i, 774.
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- cyano-**, esters, refraction of, in relation to the constitution of (HALLER and MULLER), 1904, A., ii, 221.
- Alkylmeconines** (MERMOD and SIMONIS), 1906, A., i, 303.
- 2-Alkylmenthatrienes**, constitution of (KLAGES), 1907, A., i, 597.
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- Alkylnarceine** and its alkyl ethers, preparation of additive products of (KNOLL & Co.), 1907, A., i, 1070.
- Alkylnarceines** (TAMBACH and JAEGER), 1906, A., i, 879.
- Alkylnitroamines** (FRANCHIMONT), 1910, A., i, 616.
- Alkylnitrosoamides**, electro-reduction of (BACKER), 1912, T., 592; P., 65.
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- 5-Alkylxy-2-acetylphenyl mercaptan**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 240.
- Alkylxy-acids**, affinity constants of (FINDLAY, TURNER, and OWEN), 1909, T., 938; P., 146.
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- α -Alkylxy-acids**, synthesis of, from ethyl chloroethoxyacetic acid (BLAISE and PICARD), 1911, A., i, 349.
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- α -Alkylxyalkylacetic acids**, synthesis of (BLAISE and PICARD), 1912, A., i, 535.
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- 2-Alkylxy-1-alkylpyrimidines** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 527.
- Alkylxyamides**, velocity of hydrolysis of (KILPI), 1912, A., ii, 748.
- Alkylxyanthranols** (LIEBERMANN, GLAWE, and LINDENBAUM), 1904, A., i, 901.
- β -Alkylxyethylenic ketones**, action of hydrazine and of hydroxylamine on (MOUREU and BRACHIN), 1904, A., i, 824.
- Alkylxyglycols**, preparation and reactions of (RÉHAL and SOMMELET), 1907, A., i, 275, 282, 460.
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- Alkylxymethyl ethers of aromatic hydroxy-compounds**, preparation of (HOERING and BAUM), 1909, A., i, 572.
- 4-Alkylxy- α -naphthols**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 951.
- 2-Alkylxypyrimidines** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 159.

- S-Alkylphenazothionium**, derivatives of (BARNETT and SMILES), 1910, T., 980; P., 92.
- o-Alkylphenols**, halogen derivatives, action of nitric acid on (ZINCKE and KLOSTERMANN), 1907, A., i, 322; (ZINCKE), 1912, A., i, 964.
- p-Alkylphenols**, halogen derivatives, action of nitric acid on (ZINCKE, SCHNEIDER, and EMMERICH), 1903, A., i, 756.
- Alkylphosphines** (AUGER), 1904, A., i, 983; (AUGER and BILLY), 1904, A., i, 984.
- Alkylphthalimides**, action of magnesium organic compounds on (SACHS and LUDWIG), 1904, A., i, 266.
- 1-Alkylpiperidines**, formation of (v. BRAUN, MÜLLER, and BESCHKE), 1907, A., i, 151.
- β -Alkylpivalic acids**, β -hydroxy-, esters, dehydration of (COURTOT), 1906, A., i, 230, 396, 554; (BLAISE and COURTOT), 1906, A., i, 553, 794.
- 1-Alkylpyridones**, action of phosphorus pentachloride on (FISCHER), 1903, A., i, 52.
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- 1-Alkylpyrrolidines**, new preparation of (LÖFFLER and FREYTAG), 1909, A., i, 830; (LÖFFLER), 1910, A., i, 632.
- 2-Alkylquinazolines**, 4-hydroxy-, alkylation of (BOGERT and SEIL), 1907, A., i, 560.
- 4-Alkylquinolines** (BLAISE and MAIRE), 1907, A., i, 241; 1908, A., i, 566.
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- 1-Alkylquinolones**, action of phosphorus pentachloride on (FISCHER), 1903, A., i, 52.
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- Alkylthiocarbamic acids**, imino-, new synthesis of (DIXON), 1903, T., 550; P., 104.
- 2-Alkylthiolbenzoic acids** (*alkylthiosalicylic acids*), preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 797; 1909, A., i, 231, 232, 797, 923.
- Alkylthiophens**, influence of light and heat on the chlorination and bromination of (OPOLSKI), 1906, A., i, 33.
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- Alkylurethanes**, nitroso-, constitution of (SCHMIDT), 1903, A., i, 683.
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- Alkyl vinyl ketones**, condensations of (BLAISE and MAIRE), 1907, A., i, 142, 418.
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- Amine-ammonia** water obtained by the distillation of the concentrated waste-liquors from the desaccharification of molasses (ANDRLÍK), 1903, A., ii, 116.
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- $C_{11}H_{16}O_3N_2$, and its methyl ester, from the oxidation of the lactam, $C_{11}H_{14}O_2N_2$ (LAPWORTH and WECHSLER), 1907, T., 982, 1919; P., 138, 252.
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Amphibole, chemical composition of (PENFIELD and STANLEY), 1907, A., ii, 102.

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l-**Amyl alcohol**, sulphur derivatives of, and their optical activity (HILDITCH), 1908, T., 1619; P., 195.

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α -**Amylactaldehyde** and its semicarbazone (SOMMELET), 1907, A., i, 109.

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ϵ -chloro-, and *N*-benzoyl derivative, preparation and reactions of (v. BRAUN), 1904, A., i, 918; (v. BRAUN and STEINDORFF), 1905, A., i, 206, 596; (v. BRAUN and MÜLLER), 1905, A., i, 634.

- n*-**Amylamine** (α -aminopentane), ϵ -halogen derivatives of, and their benzoyl derivatives (V. BRAUN and STEINDORFF), 1905, A., i, 206.
 ϵ -hydroxy-, and its derivatives (V. BRAUN and SOBECKI), 1911, A., i, 831.
- d*-**Amylamine**, and its salts (MARCKWALD), 1904, A., i, 363; (EHRlich), 1907, A., i, 592.
- tert.*-**Amylamine** (β -amino-sec.-pentane), oxidation of (BAMBERGER and SELIGMAN), 1903, A., i, 322.
- iso***Amylamine** (α -amino-sec.-pentane), action of, on *cis*- $\alpha\beta$ -dibenzoylstyrene (SMEDLEY), 1909, T., 220.
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- γ -**Amylamine** (γ -amino-*n*-pentane), oxidation of (BAMBERGER and SELIGMAN), 1903, A., i, 323.
- Amylamine** (γ -amino-sec.-pentane; $\alpha\beta$ -dimethylpropylamine), preparation of (CHEMISCHE WERKE VORM. H. BYK), 1908, A., i, 395.
- iso***Amylaminoacetal**, and its derivatives (PAAL and VAN GEMER), 1908, A., i, 511.
- iso***Amylaminocyclohexane**, and its phenylcarbamide (SABATIER and MAILHE), 1912, A., i, 103.
- iso***Amylammonium cyanide** (MICHAEL and HIBBERT), 1909, A., i, 91.
- iso***Amylisoamylcyanamide**, ω -bromo- (V. BRAUN), 1907, A., i, 961.
- Amylaniline**, ω -bromo-, and its salts (V. BRAUN), 1907, A., i, 960.
- p*-*tert.*-**Amylaniline**, acetyl and benzoyl derivatives (ANSCHÜTZ and BECKERHOFF), 1903, A., i, 556.
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- 9-*iso***Amylanthrone** bromide and chloride, reactions of (JÜNGERMANN), 1905, A., i, 795.
- iso***Amylarsine** disulphide and *iso***Amylarsinic acid** (DEHN and McGRATH), 1906, A., i, 341.
- Amylase** (EFFRONT), 1904, A., i, 1069; (WOHL and GLIMM), 1910, A., i, 799.
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- Amylases** (KENDALL and SHERMAN), 1910, A., i, 799; (SHERMAN, KENDALL, and CLARK), 1910, A., ii, 1012; (SHERMAN and SCHLESINGER), 1911, A., i, 827; 1912, A., i, 815.
- Amylbenzene**, ϵ -chloro- (MERCK), 1912, A., i, 111.
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- sec.*-**Amylbenzene**. See α -Methylbutylbenzene.
- sec.*-*iso***Amylbenzene**. See $\alpha\beta$ -Dimethylpropylbenzene.
- tert.*-**Amylbenzene**, formation of, and its nitro-derivative (ANSCHÜTZ and BECKERHOFF), 1903, A., i, 556.
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- iso***Amylboric acid** (KHOTINSKY and MELAMED), 1909, A., i, 864.
- 6-**Amylcarbamino- α -naphthol-3-sulphonic acid**, sodium salt (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 667.
- iso*- and *sec.*-**Amylcarbazoles** and their picrates (LEVY), 1912, A., i, 304.
- iso***Amylcarbithionic acid**. See *iso*Hexoic acid, dithio-.
- iso***Amylrichlorosilicane** (MELZER), 1908, A., i, 967.
- β -*n*-**Amylcinnamic acid** (SCHROETER), 1907, A., i, 531.
- 1-*iso***Amylconhydrine** (SCHOLTZ and PAWLICKI), 1905, A., i, 473.
- 4-*iso***Amyl-m-cresol**, α -hydroxy- (HOERING and BAUM), 1909, A., i, 572.
- iso***Amylcyanamide** (McKEE), 1906, A., i, 732.
- iso***Amylcyanacetamide** (GUARESCHI), 1903, A., i, 737.
- Amylene**, action of aluminium chloride and of heat on (ENGLER and ROTALA), 1910, A., i, 2.

- Amylene ozonide** (HARRIES and HAEFFNER), 1908, A., i, 846.
- Amylene**, bromo- (FROEBE and HOCHSTETTER), 1903, A., i, 320.
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- α*-**Amylene**, *δ*-chloro- (PARISELLE), 1912, A., i, 331.
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- Amylene glycol** (KLING), 1904, A., i, 2.
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- 2-Amylenedihydroisindole**, and its methiodide (SCHOLTZ and WOLFRUM), 1910, A., i, 773.
- 1-Amylenepiperidine**. See *ε*-Piperidino-*Δα*-pentene.
- Amylglucoside**, *α*-amino- (IRVINE and HYND), 1912, P., 320.
- β*-**Amylglucoside** and its hydrate, and tetra-acetyl derivative (FISCHER and RASKE), 1909, A., i, 365.
- β*-**isoAmylglucoside** (BOURQUELOT and BRIDEL), 1912, A., i, 946.
- Amyllycerol** and its triacetate (REIF), 1908, A., i, 847.
- β*-*n*-**Amyllycerol** *αγ*-diethyl ether (SOMMELET), 1907, A., i, 108.
- α*-**isoAmylisoheptaldehyde** and its oxime (SOMMELET), 1907, A., i, 108.
- δ*-**isoAmylheptane** (MURAT and AMOUREUX), 1912, A., i, 528.
- isoAmylheptylideneimine* sodium sulphite (HENRY), 1904, A., i, 854.
- tert.*-**Amylhydroxylamine** (BAMBERGER and SELIGMAN), 1903, A., i, 322.
- isoAmylisoindolone* (BÉIS), 1904, A., i, 503.
- isoAmylmalonic acid* (PICCININI), 1904, A., i, 504.
- Amyl β-methyloctyl ketone** (BOUVEAULT and LOCQUIN), 1905, A., i, 19.
- 2-*n*-Amylnaphthacinchonic acid** (BAGARD), 1907, A., i, 385.
- Amylocellulose** (MAQUENNE and ROUX), 1905, A., i, 511.
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- Amylocellulose** and starch coagulum, separation of (WOLFF), 1905, A., ii, 866.
- Amyloclastic activity**, determination of (EVANS), 1912, A., ii, 573.
- Amylocoagulase** (WOLFF and FERNBACH), 1904, A., i, 211; (MAQUENNE), 1904, A., i, 227; (BOIDIN), 1904, A., i, 276; (FERNBACH and WOLFF), 1904, A., i, 374.
- Amylodextrin**, iodo-compound of (SYNIEWSKI), 1903, A., i, 68.
- Amyloid** (NEUBERG), 1905, A., i, 162.
- Amyloid degeneration**, the chemistry of (HANSEN), 1908, A., ii, 988.
- Amyloid protein** (MAYEDA), 1909, A., i, 274.
- Amyolytic action**, influence of certain amphoteric electrolytes on (FORD and GUTHRIE), 1905, P., 296; 1906, T., 76.
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- Amylopectin** and **Amylopectinase** (MAQUENNE and ROUX), 1905, A., i, 511.
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- Amylose**, characteristic properties of (GATIN-GRUZEWSKA), 1911, A., i, 357.
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- Amyloses** (PRINGSHEIM and LANGHANS), 1912, A., i, 832.
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- 5-Amylisooxazole** (MOUREU and DELANGE), 1904, A., i, 650.
- Amylisooxazolone** and its ammonium salt and benzoyl derivative, and imine and its hydrochloride and acetyl derivative (MOUREU and LAZENNEC), 1907, A., i, 717.
- Amyloxide**, sodium, reductions with (DIELS and RHODIUS), 1909, A., i, 351.
- Amyloxyacetonitrile**, preparation of (GAUTHIER), 1907, A., i, 21.
- iso*-**Amyloxyacetonitrile**, preparation of (SOMMELET), 1907, A., i, 21.
- Amyloxyacetylacetoacetic acid**, ethyl ester (WEIZMANN, DAVIES, and STEPHEN), 1912, P., 103.
- α*-**Amyloxyamylenes**, *ε*-bromo- (HAMONET), 1904, A., i, 705.
- o*-, *m*-, and *p*-**isoAmyloxybenzoic acid**, methyl esters of (COHEN and DUDLEY), 1910, T., 1744.
- α*-**Amyloxybutane** and its *δ*-bromo- and *δ*-iodo-derivatives (HAMONET), 1904, A., i, 467.

- 2-isoAmyloxylepidine** (BOGERT and MAY), 1909, A., i, 329.
- 2-Amyloxy-1-methylcyclohexane** (MURAT), 1909, A., i, 146.
- 4-isoAmyloxy-2-methylquinazoline**, 7-nitro- (BOGERT and SEIL), 1907, A., i, 561.
- 4-isoAmyloxy- α -naphthol** (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 951.
- isoAmyloxypropanone** (GAUTHIER), 1909, A., i, 354.
- 2-isoAmyloxyquinoline** (BOGERT and MAY), 1909, A., i, 329.
- α -Amyloxystyrene** (TIEFFENEAU), 1908, A., i, 19.
- p*-tert.-Amylphenol**, formation of (ANSCHÜTZ and BECKERHOFF), 1903, A., i, 556.
- decomposition of (ANSCHÜTZ and RAUFF), 1903, A., i, 555.
- p*-tert.-Amylphenol**, 1:2:6-triamino-, and 2:6-dinitro-, and its ammonium salt and methyl ether (ANSCHÜTZ and RAUFF), 1903, A., i, 556.
- o*-isoAmylphenol**, α -hydroxy- (HOERING and BAUM), 1909, A., i, 572.
- p*-tert.-Amyl-*o*-phenylenediamine**, and 6-nitro- (ANSCHÜTZ and RAUFF), 1903, A., i, 556.
- d*-Amyl-phthalamic acid** and -phthalimide (MARCKWALD), 1904, A., i, 363.
- Amylphthalimide**, ϵ -chloro-, and ϵ -iodo- (GABRIEL), 1909, A., i, 891.
- 1-Amylpiperidine**, γ -amino-, and its additive salts, carbamide, phenyl-carbamide, and oxamide (BLAISE and MAIRE), 1908, A., i, 398.
- δ -bromo-** (V. BRAUN, MÜLLER, and BESCHKE), 1907, A., i, 152.
- 1-isoAmylpiperidine**, action of cyanogen bromide on (V. BRAUN), 1907, A., i, 961.
- Amylpropionaldehyde** *o*-diethyl ether (MOUREU and DELANGE), 1904, A., i, 650.
- Amylpropionic acid**, preparation and derivatives of (MOUREU), 1903, A., i, 312.
- and its amide and nitrile (MOUREU and LAZENNEC), 1906, A., i, 148.
- isoAmylpropionic acid** (ϵ -methyl- α -heptinoic acid), and its esters (MOUREU and DELANGE), 1903, A., i, 313.
- n*-Amylisoopropylcarbinol**, rotation of (PICKARD and KENYON), 1911, P., 324.
- 3-Amylpyrazoline**, 5-imino-, and its picrate (MOUREU and LAZENNEC), 1907, A., i, 159.
- 3-Amylpyrazolone** (BOUVEAULT and BONGERT), 1903, A., i, 143.
- 1-isoAmylpyridinium salts** (DECKER, KAUFMANN, SASSU, and WISLOKI), 1911, A., i, 1024.
- 1-isoAmyl-2-pyridone** (DECKER, KAUFMANN, SASSU, and WISLOKI), 1911, A., i, 1024.
- isoAmylisoquinolinium iodide** (WEDEKIND and NEY), 1912, A., i, 502.
- 1-isoAmyl-2-quinolone** and compound of, with mercuric chloride (BOGERT and MAY), 1909, A., i, 329.
- 2-isoAmyltetrahydroisoquinoline** (WEDEKIND and NEY), 1912, A., i, 502.
- 2-isoAmyltetrahydroisoquinolinium acetic acid iodide**, *l*-menthyl ester (WEDEKIND and NEY), 1912, A., i, 502.
- 4-isoAmyl-1:4-thiazan** and its salts (CLARKE), 1912, T., 1588; P., 218.
- ψ -isoAmylthiocarbamide** hydrobromide (WHEELER and BRISTOL), 1905, A., i, 482.
- isoAmylthiolbenzylacetophenone** (RUHEMANN), 1905, T., 463.
- isoAmylthiolbenzyl-acetylacetone** and -benzoylacetone (RUHEMANN), 1905, T., 21.
- isoAmylthiolbenzylbenzylidenacetone**. See Styryl *iso*amylthiolbenzylmethyl ketone.
- isoAmyltoluene**, $\alpha\beta$ -dibromo- and diiodo- (KUNCKELL and STAHEL), 1904, A., i, 387.
- Amyltrimethylammonium**, amino-, hydr-oxide, and its salts (V. BRAUN), 1911, A., i, 613.
- α -Amyrin**, identity of, with ilicylalcohol (JUNGFLEISCH and LEROUX), 1908, A., i, 1000.
- cinnamic ester of (WINDAUS and WELSCH), 1908, A., i, 903.
- β -Amyrin** acetate, occurrence of, in some varieties of gutta-percha (VAN ROMBURGH and COHEN), 1906, A., i, 197.
- from balata (COHEN), 1907, A., i, 715.
- Amyrins**, α - and β -, from bresk (COHEN), 1907, A., i, 230.
- Amyrinic acid** (TSCHIRCH and SAAL), 1904, A., i, 759.
- Anæmia**, experimental, blood formation in spleen and liver in (V. DOMARUS), 1908, A., ii, 509.
- bacterial processes in advanced (HERTER), 1906, A., ii, 786.
- irritability of the brain during (GIES), 1903, A., ii, 443.
- cerebral, effect of, on nerve cells (HILL and MOTT), 1906, A., ii, 240.
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- chemical action of blood-poisons producing (MAIDORN), 1912, A., ii, 1082.

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- Anhydrogitalin** (KRAFT), 1911, A., i, 734; 1912, A., i, 374.
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- Anhydro- γ -hydroxypropylphthalamic acid** and its additive salts and nitrosoamine (GABRIEL), 1905, A., i, 649, 650.
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- Anhydro-S-phenetyl-3:3'-dinitrophen-azothionium** (SMILES and HILDITCH), 1908, T., 150.
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- Anhydroisoquinolinephenacyloxime** and its salts (IHLDER), 1903, A., i, 365.
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- Aniline**, *p*-nitro-, diazotised, stability of (SCHWALBE), 1905, A., i, 952.
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- 1-Aniline-2-sulphinic acid**, and 4-bromo-, and its sodium salt (CLAASZ), 1911, A., i, 436.
- Anilinesulphonamic acid** (WEIL and WEISSE), 1910, A., i, 470.
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- 2-iodo-4-nitro-, and *p*-nitro-, and their salts (BOYLE), 1911, T., 329.
- 4:6-dinitro-, potassium salt (ULLMANN and HERRE), 1909, A., i, 476.
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- 2:5-dichloro-, and its salts (NOELTING and KOPP), 1905, A., i, 873.
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- 2:6-dinitro-, potassium salt (ULLMANN and KUHN), 1909, A., i, 475.
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- γ -**Anilinoacetoacetic acid**, α -cyano-, ethyl ester, and its hydrochloride (BENARY), 1908, A., i, 601.
- Anilinoaceto-*p*-hydroxyanilide**, *p*-hydroxy-, and its hydrochloride (HINSBERG), 1908, A., i, 453.
- Anilinoacetone** and its hydrate (RICHARD), 1907, A., i, 755.
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- ω -**Anilinoacetophenone**, *p*-chloro-, phenylhydrazone and semicarbazone (BUSCH and HEFELE), 1911, A., i, 584.
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- 2-Anilinoacridone** and its hydrochloride (KALB), 1910, A., i, 638.
- 7-Anilino-10-*p*-aminophenylsafranrol**, 7-*p*-amino-, and its hydrochloride (HELLER), 1912, A., i, 917.
- 3-Anilino-5-anilo-1:1-dimethyl- Δ^3 -cyclohexene**, and its additive salts and acetyl derivative (HAAS), 1906, T., 203.
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- 1-Anilinoanthraquinone**, and *o*-, and *p*-amino-, and their acetyl derivatives, 4'-chloro-2'-nitro-, and *o*-, and *p*-nitro- (ULLMANN and FODOR), 1911, A., i, 467.
- 1-Anilinoanthraquinone**, *op*-diamino-, (LAUBÉ and LIBKIND), 1910, A., i, 494.

- 2-Anilinoanthraquinone**, *op-diamino*-, and *op-dinitro*- (LAUBÉ and LIBKIND), 1910, A., i, 493.
- Anilinoanthraquinones**, 1- and 2-, *p*-bromo- (LAUBÉ), 1907, A., i, 941.
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- 1-Anilinoanthraquinone-2-carboxyl chloride** (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 980.
- 1-Anilinoanthraquinone-2-carboxylic acid** and its sodium salt, and 4'-chloro- (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 980; 1912, A., i, 980.
- 1-m-Anilino-m-azophenyl-2-methylbenziminazole**, 5-nitro-, and its acetyl derivative (BRAND), 1907, A., i, 801.
- 4-Anilinoazo-1-phenyl-3-methyl-5-pyrazolone** (BÜLOW and BOZENHARDT), 1910, A., i, 233.
- m*-**Anilinoazo-m-toluidine**, azo-dye from (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 466.
- ω*-**Anilinobenzaldehyde-p-nitro- and -o-chloro-p-nitro-phenylhydrazones** (PONZIO), 1910, A., i, 339.
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- Anilino benzophenone**, *tetrahydroxy*- (EHRMANN), 1911, A., i, 459.
- 2-Anilino benzophenone**, 5-nitro- (ULLMANN and ERNST), 1906, A., i, 205. 3:5-dinitro-, 3:5-dinitro-*p*-amino-, and 3:5-dinitro-*o*-hydroxy- (ULLMANN and BROIDO), 1906, A., i, 189.
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- Anilino-p-benzoquinoneanil, amino**-, and its sulphate and hydrochloride (MAJIMA), 1911, A., i, 216.
- 5-Anilino-p-benzoquinonedianil**, 2-amino- (MAJIMA and AOKI), 1911, A., i, 992.
- 1-Anilino benzothiazole** and its bromo-derivatives (HUGERSHOFF), 1903, A., i, 865.
- Anilino benzoxazole** and its acetyl derivative (YOUNG and DUNSTAN), 1908, T., 1052; P., 136.
- Anilino benzoylstyrene** (WATSON), 1904, T., 1326; P., 181.
- β*-Anilino benzylacetoacetic acid**, ethyl ester (RUHEMANN and WATSON), 1904, T., 1177; (RUHEMANN), 1904, T., 1451; P., 206.
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- β*-Anilino benzylacetylacetone**, *m*- and *p*-chloro- (RUHEMANN and WATSON), 1904, T., 1175; P., 175.
- Anilino benzyl-lævulic acid** (MAYER), 1905, A., i, 357.
- 1-*α*-Anilino benzyl-2-naphthol-3-carboxylic acid**, methyl ester, and its hydrochloride (FRIEDL), 1910, A., i, 742.
- 4-Anilino-1-benzylphthalazine** (LIECK), 1906, A., i, 50.
- Anilino bromomaleic anhydride** and its anil (SALMONY and SIMONIS), 1905, A., i, 632.
- 5-Anilino-1-*p*-bromophenyl-2:3-dimethylpyrazole** (MICHAELIS and ABRAHAM), 1911, A., i, 1038.
- α*-Anilino butylbenzene** and its additive salts (BUSCH and RINCK), 1905, A., i, 519.
- 1-Anilino-2-*tert*.-butyl-4:5-diphenylpyrrole** (BOON), 1910, T., 1259; P., 94.
- β*-Anilino-*n*- and -*iso*-butyranilides** (AUTENRIETH and PRETZEL), 1903, A., i, 474.
- α*-Anilino isobutyronitrile** and its derivatives (MULDER), 1907, A., i, 508.
- β*-Anilino-*α*-chloroacetylrotonic acid**, methyl ester (BENARY), 1909, A., i, 890.
- 4-Anilino-2:3:6-trichlorobenzene diazonium nitrate**, *p*-chloro- (JACOBSON, BARTSCH, LOEB, and STEINBRECK), 1909, A., i, 684.
- Anilino chloromaleic anhydride** and its anil (SALMONY and SIMONIS), 1905, A., i, 632.
- Anilino-*p*-chlorophenyl-*p*-chlorostyrylmethyl chloride**, *p*-nitro- (STRAUS and ACKERMANN), 1910, A., i, 242.
- 5-Anilino-1-*p*-chlorophenyl-2:3-dimethylpyrazole** (MICHAELIS and ABRAHAM), 1911, A., i, 1038.
- 4-Anilino coumarin** (*benzotetronanilide*), (ANSCHÜTZ, ANSPACH, FRESSENIUS, and CLAUS), 1909, A., i, 662.
- 4-Anilino coumarin-3-carboxylic acid**, ethyl ester (*3-carbethoxybenzotetronanilide*) and anilide (ANSCHÜTZ, ANSPACH, FRESSENIUS, and CLAUS), 1909, A., i, 661.
- Anilino crotonate benzylideneacetoacetic acid**. See *β*-Anilino-*δ*-phenyl- Δ^{β} -heptenone- $\gamma\epsilon$ -dicarboxylic acid.
- Anilino cyanamide** (PELLIZZARI), 1907, A., i, 873.
- 2-Anilino dehydroacridone** (KALB), 1910, A., i, 638.
- Anilino di benzoylmethane** (WIELAND and BLOCH), 1904, A., i, 656. and its nitrosoamine (WIELAND and BLOCH), 1906, A., i, 466.

- Anilinodibenzylanthracene** (LIPPMANN and FRITSCH), 1904, A., i, 866.
- Anilinodihydrogallorubin** (FEUERSTEIN and BRASS), 1904, A., i, 344.
- N-Anilinodihydrophenazine, 1:3-dinitro-N-dinitro-** (LEEMANN and GRANDMOUGIN), 1908, A., i, 478.
- 6-Anilinodihydro-2-pyrimidone and its hydrochloride** (WHEELER and BRISTOL), 1905, A., i, 485.
- 2-Anilinodihydro-6-pyrimidone** (JOHNSON and JOHNS), 1906, A., i, 456.
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- 2-Anilinodihydro-6-pyrimidone, 5-bromo-** (WHEELER, BRISTOL, and JOHNSON), 1905, A., i, 483.
- Anilinodihydrouracil** (GABRIEL), 1905, A., i, 266.
- Anilindimaleic acid anil** (WOHL and FREUND), 1907, A., i, 585.
- 4-Anilino-1:1-dimethyl- $\Delta^{3:5}$ -cyclohexadien-5-ol and its hydrochloride and acetyl derivative** (HAAS), 1906, T., 202.
- 3-Anilino-1:1-dimethyl- $\Delta^{3:5}$ -cyclohexadien-5-ol, *m*- and *p*-amino-, and their additive salts and acetyl derivatives** (HAAS), 1906, T., 389; P., 63.
- 3-Anilino-1:1-dimethyl- Δ^3 -cyclohexen-5-one, *N*-acetyl derivative and its semicarbazone** (HAAS), 1906, T., 203.
- 3-Anilino-1:1-dimethyl- Δ^3 -cyclohexenylidene-5-cyanoacetic acid, ethyl ester** (CROSSLEY and GILLING), 1910, T., 527.
- 4-Anilino-2:6-dimethylnicotinic acid and its derivatives** (MICHAELIS and HEYDEN), 1909, A., i, 529.
- 5-Anilino-1:3-dimethylpyrazole** (MICHAELIS and LACHWITZ), 1910, A., i, 642.
- 1-Anilino-5:5-dimethyl-2-thiohydantoin and its 3-ethyl and 3-phenyl derivatives** (BAILEY, ACREE, and MILLER), 1904, A., i, 827.
- 4-Anilindiphenyl, 3-amino-, and its derivatives** (DZIURZYŃSKI), 1908, A., i, 696.
4'-amino-, hydrochloride of (BUSCH and HOBEIN), 1907, A., i, 552.
- α -Anilindiphenylacetanilide** (KLINGER), 1912, A., i, 557.
- α -Anilindiphenylacetic anhydride** (STOLLÉ), 1910, A., i, 738.
- 2'-Anilindiphenylamine, 2:4:6:5'-tetra-nitro-** (KEHRMANN and RIERA Y PUNTI), 1911, A., i, 926.
- 4'-Anilindiphenylamine-2-carboxylic acid** (KALB), 1910, A., i, 638.
- Anilindiphenyl-benzyl- and -methyl-guanidines** (BUSCH and MEHRTENS), 1906, A., i, 116.
- p*-Anilindiphenylcarbamide** (KRAMMER), 1912, A., i, 916.
- 3-Anilino-1:4-diphenyl-4:5-dihydro-1:2:4-triazole and its 5-methyl derivative** (BUSCH and MEHRTENS), 1906, A., i, 115.
- 4-Anilino-1:5-diphenyldihydrotriazole, endothio-, and its nitrosoamine** (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 533.
- α -Anilindiphenyleneacetanilide** (KLINGER), 1912, A., i, 558.
- Anilindiphenylguanidine, *p*-bromo-** (BUSCH and BRANDT), 1907, A., i, 260.
p-mono- and *di*-chloro-, and their hydrochlorides (BUSCH and BRANDT), 1906, A., i, 465.
- Anilindiphenyl-methane and -ethane and their additive salts** (BUSCH and RINCK), 1905, A., i, 519.
- 5-Anilino-1:2-diphenyl-1:2:3-triazole** (BUSCH), 1907, A., i, 259.
- 3-Anilino-1:5-diphenyl-1:2:4-triazole and its benzoyl derivative** (WHEELER and BEARDSLEY), 1903, A., i, 294.
- 1-Anilino-2:5-diphenyl-1:3:4-triazole, *N*-acetyl derivative and methiodide of** (STOLLÉ), 1907, A., i, 654.
- Anilindithiocarbamic acid, ammonium salt** (LOSANITSCH), 1907, A., i, 694.
- Anilinoethenylaminooxime and its hydrochloride** (PARADIES), 1904, A., i, 153.
- 2-Anilino-5-ethoxydihydro-6-pyrimidone** (JOHNSON and HEYL), 1907, A., i, 878.
- 2-Anilino-5-ethoxypyrimidine and 6-amino-, and 6-chloro-** (JOHNSON and HEYL), 1907, A., i, 878.
- α -Anilino-*o*-ethylanisole** (ANSELMINO), 1907, A., i, 914.
- α -Anilinoethylbenzene and its salts and nitroso-derivative** (BUSCH), 1904, A., i, 664.
reactions of (BUSCH and RINCK), 1905, A., i, 519.
- β -Anilinoethyl ethyl ketone and its semicarbazone and phenylcarbamide** (BLAISE and MAIRE), 1908, A., i, 566.
- β -Anilino- α -ethylpropionanilide** (BLAISE and LUTTRINGER), 1905, A., i, 627.
- β -Anilinoethyl propyl ketone and its phenylcarbamide** (BLAISE and MAIRE), 1908, A., i, 566.
- 2-Anilino-2-ethylthiolpyrimidine and its hydrochloride** (WHEELER and BRISTOL), 1905, A., i, 485.
- 6-Anilino-2-ethylthiolpyrimidine, 5-iodo-, and its sulphate** (JOHNSON and JOHNS), 1906, A., i, 456.

α -Anilino-fatty acids, mercuriated, synthesis of (SCHOELLER, SCHRAUTH, and GOLDACKER), 1911, A., i, 699.

***p*-Anilinofuchsonophenylimine** and its salts (v. BAEYER and VILLIGER), 1904, A., i, 787.

Anilino- γ -oximino- δ -phenylhydroxyhydrazono- α -dimethylpropionylacetic acid, methyl and *p*-chloro- (PERKIN), 1903, T., 1222.

Anilino- γ -oxalic acid, aniline salt (HELLER and EMRICH), 1904, A., i, 731.

1-Anilinocyclohexane, 1-cyano- (ULTÉE), 1909, A., i, 295.

2-Anilinocyclohexanol and its hydrochloride (BRUNEL), 1905, A., i, 869.

2-Anilino- Δ^1 -cyclohexene-1-carboxylic acid, ethyl ester (KÖTZ and MERKEL), 1909, A., i, 158.

α -Anilinoisohexylbenzene and its additive salts (BUSCH and RINCK), 1905, A., i, 519.

1-Anilino-2-hydroxyanthraquinone, *p*-amino-, and *p*-nitro- (LAUBÉ and KÖNIG), 1909, A., i, 54.

1-Anilino-6-hydroxynaphthacenequinone, and its diacetyl derivative (BENTLEY, FRIEDL, THOMAS, and WEIZMANN), 1907, T., 419.

10(7)-Anilino-1-hydroxynaphthacenequinone, 7(10)-chloro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 285.

Anilino-*o*-hydroxyphenylacetamide, and its hydrochloride (ROHDE and SCHÄRTTEL), 1910, A., i, 775.

3-Anilino-6-hydroxyphenylisonaphthazophenazonium chloride (KEHRMANN and BRUNEL), 1908, A., i, 579.

1-Anilino-2:4:6-trihydroxypiperidine trisulphite, sodium salt of (SCHENKEL), 1910, A., i, 875.

1-Anilino-2:3-dihydroxy-4-pyridone and its derivatives (PERATONER and CARAPELLE), 1912, A., i, 301.

4-Anilino-2-hydroxyquinoline and its 3-benzoyl derivative (v. NIEMENTOWSKI), 1907, A., i, 1081.

4-Anilinoindanthren (SCHOLL and BERBLINGER), 1904, A., i, 111.

6-Anilinoindazole, 5:7-dinitro- (ZINCKE and KUCHENBECKER), 1905, A., i, 488.

4-Anilino-1-indoxylbenzene (FRIEDLÄNDER and SCHULOFF), 1908, A., i, 675.

Anilinoitaconic acid, methyl ester (WISLICENUS, BÖKLEN, and REUTHE), 1909, A., i, 11.

Anilinoketo-. See Ketoanilino-.

β -Anilino-ketones from fatty ketones, properties of (MAYER), 1905, A., i, 214, 357, 791.

Anilinomalonic acid, ethyl ester, acid derivative (CURTISS), 1903, A., i, 162.

nitroso-, ethyl ester (CURTISS), 1903, A., i, 162, 754.

Anilino-methoxybenzoic acid. See Methoxydiphenylaminecarboxylic acid.

2-Anilino-4'-methoxybenzophenone, 5-nitro- (ULLMANN and ERNST), 1906, A., i, 206.

2-Anilino-6-methoxypyrimidine (JOHNSON and HEYL), 1907, A., i, 878.

5-Anilino-1-methylamino-2:4:6-trinitrobenzene (BLANKSMA), 1903, A., i, 158.

1-Anilino-2-methylantraquinone, *p*-bromo- and *o*-chloro- (LAUBÉ and KÖNIG), 1909, A., i, 55.

4-Anilino-1-methylantraquinone (HELLER, GRÜNTAL, and RUHTENBERG), 1912, A., i, 358.

Anilino-methylcarbinol and its salts and benzoyl derivative (KOLSHORN), 1904, A., i, 675.

and its hydrochloride and picrate (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 418.

2-Anilino-3-methylcinchonine anilide (ORNSTEIN), 1907, A., i, 444.

Anilino-methylcitraconanil (FICHTER and GOLDBERGER), 1904, A., i, 648.

4-Anilino-7-methylcoumarin (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.

4-Anilino-7-methylcoumarin-3-carboxylic acid, ethyl ester, and anilide (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.

2-Anilino-1- and -2-methyldihydro-6-pyrimidones (JOHNSON and HEYL), 1907, A., i, 878.

Anilino-methyleneacetoacetanilide, *p*-bromo- (DAINS and BROWN), 1909, A., i, 781.

Anilino-methyleneacetoacetic acid, *p*-bromo-, ethyl ester (DAINS and BROWN), 1909, A., i, 781.

Anilino-methyleneacetoacetyl *p*-bromoanilide, and *p*-bromo- (DAINS and BROWN), 1909, A., i, 781.

Anilino-*d*-methylenecamphor, rotatory power of (POPE and READ), 1909, T., 177; P., 19.

o-, *m*-, and *p*-nitro- (POPE and READ), 1909, T., 182.

- 4-Anilinomethylene-1:3-diphenyl-5-pyrazolone** (DAINS and BROWN), 1909, A., i, 782.
- Anilinomethylenhomophthalic acid, ethyl ester** (DIECKMANN and MEISER), 1908, A., i, 895.
- 4-Anilinomethylene-1-phenyl-3-methyl-5-pyrazolone, and *p*-bromo-** (DAINS and BROWN), 1909, A., i, 782.
- 6-Anilino-4-methyl-5-ethylpyrimidine, 2-amino-** (BYK), 1903, A., i, 658.
- 4-Anilino-*N*-methyl-lutidinium salts** (MICHAELIS and HILLMANN), 1907, A., i, 727.
- 6-Anilino-9-methyl- $\alpha\beta$ -naphthaphenazine, 8-amino-** (ULLMANN and UNKERSMIT), 1905, A., i, 554.
- 6-Anilinomethyl-2-phenyldihydroisoindole and its hydrobromide** (CIUSA), 1906, A., i, 942.
- 3-Anilino-2-methyl-4-quinazolone** (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 58.
7-amino-, acetyl derivative (BOGERT, AMEND, and CHAMBERS), 1910, A., i, 895.
- 2-Anilino-4-methylthiazole, acetyl derivative** (YOUNG and CROOKES), 1905, P., 308.
- 4-Anilino-2-methylthiolpyrimidine, 6-amino-, and 5-*p*-dibromo-6-amino-** (JOHNSON and JOHNS), 1905, A., i, 837.
- 1-Anilino-5-methyltriazole, and its 4-carboxylic acid, and its ethyl ester and silver salt** (WOLFF, BOCK LORENTZ, and TRAPPE), 1903, A., i, 206.
- 5-Anilino-1-methyl-1:2:3-triazole** (DIMROTH and HESS), 1909, A., i, 268.
- Anilidonaphthacenequinone** (ORCHARDSON and WEIZMANN), 1906, T., 118.
- Anilidonaphthalene, 1-amino-8-*op*-dinitro-, and its derivatives** (SACHS and FORSTER), 1911, A., i, 754.
- Anilidonaphthalene.** See also Phenyl-naphthylamine.
- 6-Anilidonaphthaphenazoxonium, 3-amino-, and the leuco-compound and its acetyl derivative** (KEHRMANN, DE GOTTRAU, and LEEMANN), 1907, A., i, 554.
- Anilidonaphthaphenoxazone** (FISCHER and HEPP), 1903, A., i, 654.
- 2-Anilino- α -naphthaquinone, *p*-amino-, and its sulphate** (PUMMERER and BRASS), 1911, A., i, 654.
- Anilino-1:4-naphthaquinoneanil** (v. EULER), 1906, A., i, 369; (A. and H. v. EULER), 1906, A., i, 370.
- Anilinnaphthaquinonediketohydrindene** (STADLER), 1903, A., i, 102.
- 2-Anilino- α -naphthol.** See 1:2-Naphthaquinolanil.
- 8-Anilino- α -naphthol-3:6-disulphonic acid, sodium and sodium hydrogen salts** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 914.
- Anilino-2-naphthylamine, 7-*di*- and -*tri*-nitro-** (KAUFLER), 1907, A., i, 308.
- 5-Anilino-1- β -naphthyl-3-methylpyrazole and its *N*-benzoyl and -methyl derivatives** (MICHAELIS and DANZFUSS), 1905, A., i, 481.
- 8-Anilidonaphthylloxamic acid, *op*-dinitro-, ethyl and methyl esters** (SACHS and FORSTER), 1911, A., i, 755.
- 8-Anilino-1-naphthylphenylcarbamide, *op*-dinitro-** (SACHS and FORSTER), 1911, A., i, 755.
- 8-Anilino-1-naphthylphenylthiocarbamide, *op*-dinitro-** (SACHS and FORSTER), 1911, A., i, 755.
- 8-Anilino-1-naphthylsuccinamic acid, *op*-dinitro-, and its anhydride** (SACHS and FORSTER), 1911, A., i, 755.
- 5-Anilino-2:4:6-*tri*nitrophenyl methyl ether.** See 3-Methoxydiphenylamine, 2:4:6-*tri*nitro-.
- 5-Anilino-1-*m*-nitrophenyl-3-methylpyrazole** (MICHAELIS, GRAFF, GESING, and BOIE), 1911, A., i, 235.
- 4-Anilino-6-nitro-*m*-toluic acid, *op*-dinitro-** (ERRERA and MALTESE), 1906, A., i, 85.
- Anilino-oximinoacetoneitrile** (STEINKOPF and JÜRGENS), 1911, A., i, 530.
- Anilino-oximinoisooxazolone** (WIELAND and GMEIN), 1909, A., i, 611.
- 8-Anilino α paraxanthine** (BOEHRINGER & SÖHNE), 1905, A., i, 230.
- Anilino α cyclopentenedione, bromo- and tribromo- and hydroxy-, and its acetyl derivative** (JACKSON and FLINT), 1910, A., i, 178.
- 2-Anilino α perimidine and its picrate** (SACHS), 1909, A., i, 431.
- 10-Anilinophenanthrene, 9-hydroxy-,** (SCHMIDT and LUMPP), 1910, A., i, 313.
- 2-Anilinophenetole, 3:5-*dinitro*-** (BLANKSMA), 1905, A., i, 431.
- 3-Anilinophenetole, 4:6-*dinitro*-** (BLANKSMA), 1904, A., i, 577.
- s*-Anilinophenosafranine** (BARBIER and SISLEY), 1907, A., i, 160.
phenylated, synthesis of, and its additive salts (BARBIER and SISLEY), 1908, A., i, 64.
- as*-Anilinophenosafranine** (BARBIER and SISLEY), 1907, A., i, 160.

- 3-Anilinophenotoluazothionium**, 7-benzoylamino-2:4-diacetylamino-, and 2:4-diamino-7-benzoylamino-, 6-chlorides (MITSUGI, BEYSLAG, and MÖHLAU), 1910, A., i, 338.
- 1-Anilino-5-phenoxyanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 798.
- 1-Anilino-8-phenoxyanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 519.
- β -Anilino- γ -phenoxy- α - p -chlorophenylcrotononitrile** (v. WALTHER and HERSCHEL), 1911, A., i, 238.
- γ -Anilino- α -phenoxypropanol** (FOURNEAU), 1910, A., i, 247.
and its picrate (LES ETABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1911, A., i, 291.
- Anilinophenylacetoneitrile**, *m*-chloro- (BAILEY and McCOMBIE), 1912, T., 2273; P., 266.
p-hydroxy-, and its amide (BUCHERER and GROLÉE), 1906, A., i, 350.
- Anilinophenylacetothioamide** (JOHNSON and CHERNOFF), 1912, A., i, 810.
- 3-Anilino-4-phenyl-1- p -bromophenyl-4:5-dihydro-1:2:4-triazole** (BUSCH and BRANDT), 1907, A., i, 260.
- γ -Anilino- γ -phenylbutyric acid**, β -nitro-, methyl ester (WIELAND), 1904, A., i, 55.
- p -Anilinophenylcarbamide**, and its bromo-derivative (KRAMMER), 1912, A., i, 916.
- 6-Anilino-3-phenyldihydropyrazoquinazolinone** (MICHAELIS and LEO), 1910, A., i, 515.
- β -Anilino- β -phenylethyl alkyl ketones** (MAYER), 1905, A., i, 212, 357.
- Anilinophenylfluorene** (KIEGL), 1905, A., i, 187.
- 2-Anilinophenylglycine**, 5-nitro- (REISERT and GOLL), 1905, A., i, 247.
- β -Anilino- δ -phenyl- $\Delta\beta$ -heptenone- $\gamma\epsilon$ -dicarboxylic acid** (*anilinoacetonatebenzylideneacetoacetic acid*), ethyl ester (KNOEVENAGEL, ERLER, and REINECKE), 1903, A., i, 652.
- 4-Anilino-4-phenylhydantoin** (GABRIEL), 1907, A., i, 91.
- α -Anilino- ϵ -phenylhydrazinopiperylene**, *m*-chloro- (KÖNIG), 1911, A., i, 485.
- β -Anilino- δ -phenylhydroxyhydrazone- $\alpha\alpha$ -dimethylvaleric acid**, γ -oximino- β -hydroxy-. See Dianilinoxyoximedi-methylmalonylic acid.
- Anilinophenyliminocalloxanic acid** (KÜHLING and KASELITZ), 1906, A., i, 463.
- 4-Anilinophenylimino-3-phenylisooxazolone** (MEYER), 1911, A., i, 687.
- γ -Anilino- α -phenylimino- $\Delta\beta$ -propylene**, β -bromo- and β -chloro-, hydrobromide and hydrochloride of (DIECKMANN and PLATZ), 1905, A., i, 117.
- β -Anilino- β -phenyl- α -lactic acids**, isomeric (ERLENMEYER and BARKOW), 1906, A., i, 237.
- Anilinophenylmethanesulphonic acid**, aniline and sodium salts (KNOEVENAGEL and KLUCKE), 1904, A., i, 989.
- 5-Anilino-1-phenyl-3-methyl-4-antipyrinylpyrazole** and its additive salts and its 5-*N*-acetyl derivative (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 732.
- 5-Anilino-1-phenyl-3-methylpyrazole** (MICHAELIS and HEPNER), 1904, A., i, 112.
and its salts and derivatives (MICHAELIS), 1911, A., i, 1037.
- Anilinophenyl- α -naphthylmethane** and its hydrochloride (BUSCH and RINCK), 1905, A., i, 520.
- Anilinophenylnitroethane** (MAYER), 1905, A., i, 357.
- p -Anilinophenyl-*o*-nitrophenylcarbamide** (KRAMMER), 1912, A., i, 916.
- p -Anilinophenyl-4-nitro-*o*-tolylcarbamide** (KRAMMER), 1912, A., i, 916.
- p -Anilinophenyl-3-nitro-*p*-tolylcarbamide** (KRAMMER), 1912, A., i, 916.
- 3-Anilino-5-phenylisooxazole**, 4-amino- and 4-nitroso- (WIELAND and GMEIN), 1910, A., i, 784.
- 4-Anilino-1-phenylphthalazine** (LIECK), 1906, A., i, 51.
- 3-Anilino-1:4- and -4:1-phenyl-*p*-tolyl-4:5-dihydro-1:2:4-triazoles** (BUSCH and MEHRTENS), 1906, A., i, 118.
- Anilinophenyl-*p*-tolylguanidine** (BUSCH and MEHRTENS), 1906, A., i, 118.
- 5-Anilino-1-phenyl-1:2:3-triazole** (DIMROTH and HESS), 1909, A., i, 269.
- 3-Anilino-1-phenyl-1:2:4-triazole**, 5-amino-, and its acetyl derivative and hydrochloride (FROMM and v. GÖNCZ), 1907, A., i, 873.
- 5-Anilino-1-phenyl-1:2:4-triazole**, 3-amino-, and its acetyl derivative and hydrochloride (FROMM and v. GÖNCZ), 1907, A., i, 873.
- 5-Anilino-4-phenyltriazole** and salts of (DIMROTH and HESS), 1909, A., i, 268.
- 3-Anilino-4-phenyl-5-triazolone** (BUSCH and BLUME), 1907, A., i, 261.
- Anilino-9-phenylxanthenyl chloride**, 3:6-*di-p*-amino-, and 3:6-*di-p*-hydroxy- (POPE and HOWARD), 1911, T., 553.

- Anilinophosphoryl chloride**, amino-, benzoyl derivative (TITHERLEY and WORRALL), 1909, T., 1152; P., 150.
- 1:5-Anilinopiperidinoanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & CO.), 1903, A., i, 499.
- γ -Anilino- $\Delta\beta$ -propene- α -al**, β -bromo- and β -chloro- (DIECKMANN and PLATZ), 1905, A., i, 117.
- 1-Anilino- Δ^1 -cyclopropen-3-one** (JACKSON and FLINT), 1910, A., i, 178.
- β -Anilinopropionanilide** and its hydrochloride (AUTENRIETH and PRETZEL), 1903, A., i, 474.
- α -Anilinopropionitrile** (BADISCHE ANILIN- & SODA-FABRIK), 1903, A., i, 754.
- α -Anilinopropylbenzene** and its additive salts (BUSCH and RINCK), 1905, A., i, 519.
- 8-Anilino-1-propylideneaminonaphthalene**, *op-dinitro*- (SACHS and FORSTER), 1911, A., i, 755.
- α -Anilino- α -*p*-isopropylphenylethane** and its hydrochloride (BUSCH and RINCK), 1905, A., i, 520.
- β -Anilino- α -propylpropionanilide** (BLAISE and LUTTRINGER), 1905, A., i, 628.
- 4-Anilinopyridazoneanthrone** (ULLMANN), 1912, A., i, 1028.
- 2-Anilinopyrimidine**, synthesis of, and its additive salts and 6-chloro-derivative (JOHNSON and HEYL), 1907, A., i, 877.
- 6-chloro-5-bromo-** (WHEELER, BRISTOL, and JOHNSON), 1905, A., i, 483.
- 3-Anilino-4-quinazoline-2-carboxylic acid**, ethyl ester (BOGERT and GORTNER), 1910, A., i, 284.
- Anilinoquinoline**, nitro- and nitroamino-derivatives and their additive salts and acetyl derivatives (MEIGEN, GARBS, MERKELBACH, and WICHERN), 1908, A., i, 580.
- 4-Anilinoquinoline** and 2-chloro- and its hydrochloride (v. NIEMENTOWSKI), 1907, A., i, 1081.
- 8-Anilinoquinoline**, 5-chloro-6-hydroxy- (FÜHNER), 1907, A., i, 150.
- Anilinoquinones**, oxidation of, to benzidine derivatives (BRASS), 1912, A., i, 874.
- 3-Anilino rhodanic acid** (ANDREASCH), 1907, A., i, 283.
- o*-Anilinoisoresindone** (FISCHER and RÖMER), 1907, A., i, 982.
- 3-Anilino-2-styryl-4-dihydroquinazolinone** (BOGERT and BEAL), 1912, A., i, 394.
- Anilino tartronic acid**, methyl ester (CURTISS and SPENCER), 1909, A., i, 764.
- β -Anilino- $\alpha\alpha\beta\beta$ -tetraphenylpropionic acid**, β -lactam of (STAUDINGER and JELAGIN), 1911, A., i, 215.
- 8-Anilino theophylline** (BOEHRINGER & SÖHNE), 1905, A., i, 231.
- Anilinothioacetamide** (PARADIES), 1904, A., i, 153.
- 3-Anilinothiohydantoin** (FRERICHS and FÖRSTER), 1910, A., i, 191.
- 3-Anilino toluene**, 4-nitro- (BORSCHÉ, WITTE, and BOTHE), 1908, A., i, 367.
- 2-Anilino toluene- ω -sulphonic acid**, 5-nitro-, sodium salt (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 662.
- Anilino-*p*-toluidinophosphoric acid** and its alkaloidal salts (LUFF and KIPPING), 1909, T., 1998.
- 6-Anilino-2-*o*- and -*p*-toluidinopyrimidines** (JOHNSON, STOREY, and MCCOLLUM), 1908, A., i, 838.
- p*-Anilino-*o*-, -*m*-, and -*p*-tolylcarbamides** (KRAMMER), 1912, A., i, 916.
- 5-Anilino-1-*p*-tolyl-3-methylpyrazole**, 5-acetyl and 5-benzoyl derivatives (MICHAELIS and RISSE), 1911, A., i, 1039.
- 6-Anilino-2-*p*-tolyl-4-methylpyrimidine** (JOHNSON, STOREY, and MCCOLLUM), 1908, A., i, 838.
- 1-Anilino-4-*p*-tolylthiolanthraquinone-2-carboxylic acid** (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 980.
- 5-Anilino-1:2:3-triazole** and its derivatives (DIMROTH, MARSHALL, and HESS), 1909, A., i, 268.
- 5-Anilino-1:2:3-triazole-4-carboxylic acid** (DIMROTH, WERNER, and HESS), 1909, A., i, 267.
- methyl and ethyl esters and acetate of the latter (DIMROTH and WERNER), 1909, A., i, 267.
- β -Anilino tricarballylic acid** and its salts (SCHROETER, SCHWABORN, and STASSEN), 1905, A., i, 819.
- Anilino triphenylamine** and *p*-amino- and *p*-chloro- and their acetyl derivatives, and *p*-nitro- (GAMBARJAN), 1908, A., i, 1016.
- o*-Anilino triphenylcarbinol** (v. BAEYER and VILLIGER), 1904, A., i, 899.
- p*-Anilino triphenylcarbinol** and its methyl ether (v. BAEYER and VILLIGER), 1904, A., i, 309.
- 3-Anilino-1:4:5-triphenyl-4:5-dihydro-1:2:4-triazole** (BUSCH and MEHR-TENS), 1906, A., i, 117.

- ω -Anilinotriphenylmethane-4-carboxylic acid** (STAUDINGER and CLAR), 1911, A., i, 638.
- Anilo-acids**, acid anilides, and ψ -anilides (MEYER), 1908, A., i, 25.
- 2:5-endo-Anilo-1-o-**, and **-p-azophenyl-2:3-dimethylpyrazole** (o- and p-azoanilopyrine), (MICHAELIS, GRAFF, GESING, and BOIE), 1911, A., i, 235.
- 5-Anilo-1-p-bromophenyl-3-methylpyrazolone** (MICHAELIS and ISERT), 1911, A., i, 1037.
- 5-Anilo-1-p-bromophenyl-3-methylpyrazolone**, 4:5-dibromo- (MICHAELIS and THOMAS), 1911, A., i, 1038.
- 5-Anilo-1-p-chlorophenyl-3-methylpyrazolone** (MICHAELIS and ISERT), 1911, A., i, 1037.
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- endo-Anilo-diphenyl-** and **-di-p-tolyl-triazoles** and their salts (MERCK), 1905, A., i, 949.
- 5-Anilo-1-phenyl-4-anisylidene-3-methylpyrazolone** (MICHAELIS and RISSE), 1911, A., i, 1038.
- 5-Anilo-1-phenyl-4-benzylidene-3-methylpyrazolone** (MICHAELIS and RISSE), 1911, A., i, 1038.
- 3-Anilo-5-phenyl-1-m-** and **-p-chloro-** and **-nitrophenyl-2-pyrrolidones**, *m* and *p*-chloro-, and *m*- and *p*-nitro- (BORSCHKE), 1909, A., i, 53.
- 1-Anilo-1-phenyl-2:3-dimethylpyrazole**, *p*-bromo-, and *p*-chloro-, and their salts (MICHAELIS, THOMAS, and ISERT), 1911, A., i, 1042.
- 2:5-endo-Anilo-1-phenyl-2:3-dimethylpyrazole** (*anilopyrine*), and its derivatives (MICHAELIS and HEPNER), 1905, A., i, 480.
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- 2:5-endo-Anilo-1-phenyl-2:3-dimethylpyrazole**, *m*- and *p*-amino-, *m*- and *p*-nitro-, and their salts and derivatives (MICHAELIS, WURL, and DOERMANN), 1911, A., i, 1040.
- m*- and *p*-bromo-, *p*-chloro-, *mp*-dichloro-, and their salts and derivatives (MICHAELIS, THOMAS, and ISERT), 1911, A., i, 1042.
- 2:5-endo-Anilo-1-phenyl-2-ethylpyrazole** and its salts (MICHAELIS and WALTER), 1911, A., i, 1040.
- 2:5-endo-Anilo-1-phenyl-2-methylpyrazole**, and its salts (MICHAELIS and WALTER), 1911, A., i, 1040.
- 5-Anilo-1-phenyl-3-methylpyrazolone** (MICHAELIS and HEPNER), 1904, A., i, 112.
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- 2:5-endo-Anilo-1-phenyl-2-propylpyrazole** and its salts (MICHAELIS and WALTER), 1911, A., i, 1040.
- 5-Anilo-1-phenylpyrazolone** and derivatives and 4-oximino- (MICHAELIS and WALTER), 1911, A., i, 1038.
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- ψ -**Anilopyrine** and its derivatives (MICHAELIS and HEPNER), 1904, A., i, 112.
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- 2:5-endo-Anilo-1:2:3-trimethylpyrazole** (1-methylanilopyrine), and its salts and derivatives (MICHAELIS and LACHWITZ), 1910, A., i, 642.
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- Anisaldehyde-*p*-nitrophenylhydrazine** (CIUSA and VECCHIOTTI), 1911, A., i, 811.
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Anisole, *o*-, *m*-, and *p*-nitro-, nitration of (HOLLEMAN), 1903, A., i, 623.

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s-dinitro-, nitration of (BLANKSMA), 1903, A., i, 623.

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trinitro-, coloured substances from (JACKSON and EARLE), 1903, A., i, 339.

2:3:4-*trinitro*-, derivatives of (BLANKSMA), 1909, A., i, 150.

3- and 4-nitro-2-cyano-, and 4:6-dinitro-2-cyano- (BLANKSMA), 1908, A., i, 978.

2:3:5-*trinitro*-4-amino-, and its acetyl derivative (MELDOLA and KUNTZEN), 1910, T., 455; P., 58.

o-nitrothio- (BRAND), 1909, A., i, 855.

p-nitroso- (RISING), 1904, A., i, 237.

m-thio- (MAUTHNER), 1906, A., i, 949.

Anisoles, *trinitro*- (VERMEULEN), 1912, A., i, 347.

Anisole-5-azo- β -naphthol, 3-nitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 664.

***p*-Anisoleazoxy-*p*-phenetole** (RISING), 1904, A., i, 238.

thermal investigation of (ROTINJANTZ and ROTARSKI), 1907, A., ii, 226.

Anisole-4-diazobis-4-dimethylamino-benzaldoxime (BRESLER, FRIEDEMANN, and MAI), 1906, A., i, 322.

***o*-Anisole diazonium chloride** (EULER), 1903, A., i, 299.

Anisolemethylphthalimide, *o*-nitro- (TSCHERNIAC), 1903, A., i, 490.

Anisolesulphoninic acid, preparation of (KNOEVENAGEL and KENNER), 1908, A., i, 971.

Anisolesulphonacetoneitriles, *o*- and *p*- (TRÖGER and VOLKMER), 1905, A., i, 356.

Anisolesulphondialkylacetoneitriles, *o*- and *p*- (TRÖGER and VASTERLING), 1905, A., i, 371.

***p*-Anisolesulphondibenzylthioacetamide** (TRÖGER and VASTERLING), 1905, A., i, 872.

Anisolesulphonethenylamin oximes, *o*- and *p*- (TRÖGER and VOLKMER), 1905, A., i, 356.

- Anisole-*p*-sulphonic acid**, 2:6-diamino- and 2:6-dinitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 354.
o-nitro-, salts, methyl ester, amide, and chloride (GNEHM and KNECHT), 1906, A., i, 835.
- Anisothebromine** (*sodium theobromine anisate*) (v. SZTANKAY), 1907, A., i, 1071.
- Anisoyl peroxide** (VANINO and UHLFELDER), 1904, A., i, 1014.
- Anisoylacetetic acid**, oximino-, methyl ester (WAHL and SILBERZWEIG), 1912, A., i, 214.
- p*-**Anisoylacetetic acid**, ethyl ester, and its derivatives (WAHL and SILBERZWEIG), 1912, A., i, 114.
- o*-, *m*-, and *p*-**Anisoylacetetic acids**, methyl esters, and their nitroso-derivatives (WAHL and SILBERZWEIG), 1910, A., i, 263.
- Anisoylaminoacetonitrile** (JOHNSON and BURNHAM), 1912, A., i, 305.
- Anisoylaminoacetothioamide** (JOHNSON and BURNHAM), 1912, A., i, 305.
- Anisoylanisamidine** (FRANCIS and DAVIS), 1904, T., 1540; P., 204.
- Anisoylanisylidenehydrazine** (CURTIUS, MELSBACK, and RISSOM), 1910, A., i, 509.
- Anisoylazobenzene** (PONZIO and CHARRIER), 1909, A., i, 443.
- Anisoylazo-*p*-bromobenzene** (PONZIO and CHARRIER), 1909, A., i, 443.
- α -Anisoyl- β -*p*-bromophenylhydrazine**, β -nitroso- (GIOVETTI), 1909, A., i, 739.
- β -Anisoyl- α -*p*-bromophenylhydrazine** (PONZIO and CHARRIER), 1909, A., i, 443.
- o*-, *m*-, and *p*-**Anisoyldehydracetic acids** (WAHL and SILBERZWEIG), 1910, A., i, 263.
- Anisoylgyoxylic acid**, methyl ester and its derivatives (WAHL and DOLL), 1912, A., i, 626.
- Anisoylhydrazine** (CURTIUS, MELSBACK, and RISSOM), 1910, A., i, 509.
- p*-**Anisoylmandelonitrile** (FRANCIS and DAVIS), 1909, T., 1407.
- p*-**Anisoyl-*p*-methoxymandelonitrile** (FRANCIS and DAVIS), 1909, T., 1407.
- 1-Anisoyl-4-methylcoumarone**, 2-hydroxy- (AUWERS), 1910, A., i, 630.
- β -Anisoyl- α -methylhydrazine** (BAMBERGER and PEMSEL), 1903, A., i, 286.
- o*-**Anisoyl-*p*-nitrophenylpyrazolone** (WAHL and SILBERZWEIG), 1910, A., i, 263.
- α -Anisoyl- β -phenylhydrazine**, α -nitro- β -nitroso- (PONZIO and CHARRIER), 1908, A., i, 582.
- β -Anisoyl- α -phenylnitrosohydrazine** (BAMBERGER and PEMSEL), 1903, A., i, 286.
- o*-, *m*-, and *p*-**Anisoylphenylpyrazolone** (WAHL and SILBERZWEIG), 1910, A., i, 263.
- Anisoylpiperidine** (v. BRAUN), 1901, A., i, 90.
- Anisoylpropionic acid**. See *p*-Methoxybenzoylpropionic acid.
- α -Anisoyl- β -*p*-tolylhydrazine**, and β -nitroso- (GIOVETTI), 1909, A., i, 738.
- Anisyl-**. See also *p*-Methoxyphenyl-.
- Anisyl alcohol**, occurrence of, in the fruit of Tahiti vanilla (WALBAUM), 1910, A., ii, 235.
dichlorodibromo- (ZINCKE and BUFF), 1905, A., i, 881.
- Anisyl sulphoxide** (SMILES and LE ROSIGNOL), 1908, T., 755.
- Anisylacetone**. See *p*-Methoxybenzyl methyl ketone.
- Anisylacetoneazine**, *isonitroso*- (PONZIO and GIOVETTI), 1908, A., i, 835.
- p*-**Anisylacetyl bromohydrin** (TIEFFENEAU and DAUFRESNE), 1907, A., i, 515.
- p*-**Anisylacetylene**, derivatives of (MANCHOT, WITHERS, and OLTROGGE), 1912, A., i, 231.
- α -*o*-Anisylallylene** (*o*-anisylmethylacetylene), bromo-derivatives (HELL and BAUER), 1903, A., i, 479.
- Anisyl-*p*-aminophenol** and its sodium derivative (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1909, A., i, 915.
- 3-Anisyl-1-anisylideneindene** and α -hydroxy- (THIELE and BÜHNER), 1906, A., i, 570.
- Anisylasarylcarbinol**. See *p*-Methoxyphenyl-2:4:5-trimethoxyphenylcarbinol.
- p*-**Anisylazo-*p*-cresol** and its acetate and corresponding *N*-acetyl-*O*-benzoate (AUWERS, HIRT, and v. DER HEYDEN), 1909, A., i, 438.
- o*-**Anisylazoformaldoxine** (BUSCH and WOLBRING) 1905, A., i, 494.
- Anisylbenzylideneindene** (THIELE and BÜHNER), 1906, A., i, 571.
- 1-*p*-Anisyl-3-benzylidenerhodanine** (ANTULICH), 1910, A., i, 764.
- p*-**Anisyl butyl ketone** and its semicarbazone (LAYRAUD), 1906, A., i, 433.
- γ -Anisylbutyric acid**, α -hydroxy- and β -iodo- and $\alpha\gamma$ -dihydroxy-, lactone of (BOUGAULT), 1908, A., i, 539.

- Anisyl- γ -butyrolactone** (BARGELLINI and GIUA), 1912, A., i, 356.
- Anisyl chloromethyl ketone, *o*-iodo-, and its iodochloride** (WILLGERODT and BURKHARD), 1912, A., i, 630.
- Anisylchloroisopropyl alcohol** (FOURNEAU and TIFFENEAU), 1908, A., i, 163.
- o*-Anisylcinnamamide** (STOEMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- o*-Anisylcinnamamylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- o*-Anisylcinnamanilide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- o*-Anisylcinnambenzylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- β -Anisylcinnamic acids, stereoisomeric, and their esters and salts** (STOERMER and FRIDERICI), 1908, A., i, 179.
- o*-Anisylcinnammethylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- 4-*p*-Anisylcinnoline** and its salts (STOERMER and GAUS), 1912, A., i, 1026.
- γ -Anisylisocrotonic acid, α -hydroxy-** (BOUGAULT), 1908, A., i, 269, 539.
- Anisyl-4-diazobisacetoxime** (BRESLER, FRIEDEMANN, and MAI), 1906, A., i, 322.
- p*-Anisyldiguanide salts** (A. and L. LUMIÈRE and PERRIN), 1905, A., i, 250.
- 1-*p*-Anisyl-3-*p*-dimethylaminobenzylidenerrhodanine** (ANTULICH), 1910, A., i, 765.
- 1-*p*-Anisyl-2:3-dimethylbenziminazolium chloride, 4:7-*d*-nitro-6-hydroxy-** (MELDOLA and KUNTZEN), 1911, T., 2039.
- 1-*p*-Anisyl-2:3-dimethyl-2-benziminazolol, 4:7-*d*-nitro-6-hydroxy-** (MELDOLA and KUNTZEN), 1911, T., 2040.
- 1-*p*-Anisyl-2:3-dimethyl-6-benziminazolone, 4:7-*d*-nitro-** (MELDOLA and KUNTZEN), 1911, T., 2039.
- 2-Anisyl-3:5- and -3:7-dimethylindoles** (HELL and COHEN), 1904, A., i, 343.
- βp -Anisyl- $\alpha\alpha$ -dimethylpropionic acid, β -hydroxy-, and its salts, and ethyl ester, synthesis of** (BAIDAKOWSKY), 1903, A., i, 827.
- o*-, *m*-, and *p*-Anisyldimethylsulphine hydroxides, salts of** (KEHRMANN and SAVA), 1912, A., i, 968.
- α -Anisylethylamine.** See α -*p*-Methoxyphenylethylamine.
- Anisylfluorene** (THIELE and HENLE), 1906, A., i, 572.
- Anisyl-fulvene and - α -hydroxy-*p*-methoxybenzylfulvene** (THIELE and BALHORN), 1906, A., i, 640.
- α -Anisyl- α -cyclohexylbutan- γ -one** (KOLLER and BURNLEY), 1910, A., i, 392.
- Anisylhydantoic acid** (JOHNSON and BENGIS), 1912, A., i, 809.
- 4-Anisylhydantoin** (JOHNSON and BENGIS), 1912, A., i, 808.
- as-p*-Anisylhydrazinoacetic acid and its *m*-nitrobenzylidene derivative** (BUSCH and MEUSSDÖRFFER), 1907, A., i, 348.
- α -*p*-Anisylhydrohydrastinine and its salts** (FREUND and LEDERER), 1911, A., i, 907.
- 1-*p*-Anisyl-3-*p*-hydroxybenzylidenerrhodanine** (ANTULICH), 1910, A., i, 765.
- p*-Anisylhydroxylamine** (RISING), 1904, A., i, 237.
- 1-*p*-Anisyl-3-*p*-hydroxy-*m*-methoxybenzylidenerrhodanine** (ANTULICH), 1910, A., i, 765.
- Anisylidene chloride** (SCHMIDT), 1908, A., i, 654.
- Anisylideneacetone.** See *p*-Methoxystyryl methyl ketone.
- Anisylideneacetophenone.** See Phenyl *p*-methoxystyryl ketone.
- Anisylideneacetyl-1-naphthol.** See Methoxybenzylideneacetyl-1-naphthol.
- p*-Anisylideneaminodimethylaniline and its hydrochlorides** (MOORE and GALE), 1908, A., i, 369.
- Anisylideneaniline hydrochloride** (POPE and FLEMING), 1908, T., 1916.
- α -chloro-** (WHEELER and JOHNSON), 1903, A., i, 693.
- Anisylideneanthrone** (HALLER and PADOVA), 1906, A., i, 24.
- Anisylidenebenzylamine** (PADOA), 1909, A., i, 677.
- Anisylidenebisphenylmethylpyrazolone** (BETTI and MUNDICI), 1906, A., i, 544.
- Anisylidene-cinnamylideneacetone.** See *p*-Methoxystyryl β -styrylvinyl ketone.
- 4-Anisylidene-1:3-dimethylhydantoin** (JOHNSON and NICOLET), 1912, A., i, 585.
- Anisylidenefluorene** (THIELE and HENLE), 1906, A., i, 572.
- Anisylidenehydantoin, and bromo-** (WHEELER and HOFFMAN), 1911, A., i, 499.
- 4-Anisylidenehydantoin, 2-thio-** (JOHNSON and O'BRIEN), 1912, A., i, 806.

- 2-Anisylideneindene** (THIELE and BÜHNER), 1906, A., i, 570.
- α -Anisylidene- γ -*p*-methoxyphenylparaconic acid** (STOBBE and BENARY), 1911, A., i, 377.
- Anisylidene-3-methylcyclohexanone**, rotation of (HALLER), 1903, A., i, 563.
- 4-Anisylidene-1-methylhydantoin** (JOHNSON and NICOLET), 1912, A., i, 585.
- Anisylidenemethylhydrazine**, benzoyl derivative of (MICHAELIS and HADANCK), 1908, A., i, 1020.
- 3-Anisylidene-1-methylindene** (THIELE and BÜHNER), 1906, A., i, 570.
- Anisylidene- α -naphthylamine** and its hydrochloride (POPE and FLEMING), 1908, T., 1916.
- Anisylidenenitro-ethane and -methane** (KNOEVENAGEL and WALTER), 1905, A., i, 66.
- β -Anisylidenepentanonylbenzylacetophenones**, stereoisomeric (STOBBE, GEORGI, and HÄRTEL), 1909, A., i, 309.
- Anisylidenepinacolin** and its dipicrate (VORLÄNDER and SIEBERT), 1905, A., i, 793.
- Anisylidenepyrvic acid** (BOUGAULT), 1908, A., i, 269.
iodo-lactone from (BOUGAULT), 1908, A., i, 539.
- Anisylidenetanacetone** (HALLER), 1905, A., i, 602.
- Anisylidene-*m*-toluidine** and its hydrochloride (SENIER and SHEPHEARD), 1909, T., 1952.
- p*-Anisylimino-*p*-chlorophenyl-*p*-chlorostyrylmethane** and its salts and derivatives (STRAUS and HEITZ), 1912, A., i, 994.
- 1-Anisylindene** (THIELE and BÜHNER), 1906, A., i, 570.
- Anisylindole** (BOEHRINGER & SÖHNE), 1912, A., i, 64.
- β -Anisyl- α -methylacrylic acid**, ethyl ester (WALLACH and EVANS), 1907, A., i, 1061.
- 1-Anisyl-2-methylbenzimidazoles**, *o*-, *m*-, and *p*-, 4:7-dinitro-6-hydroxy-, and their salts and derivatives (MELDOLA and HAY), 1908, T., 1674.
- p*-Anisyl- β -methylisobutyl alcohol** (HALLER and BAUER), 1911, A., i, 726.
- p*-Anisyl- α -methylisobutyramide** (HALLER and BAUER), 1911, A., i, 726.
- p*-Anisyl- α -methylisobutyric acid** (HALLER and BAUER), 1911, A., i, 726.
- β -*o*-Anisyl- α -methylcinnamic acids**, stereoisomeric (STOERMER and FRIDERICI), 1908, A., i, 181.
- 2-Anisyl-4-methylcoumarone** (STOERMER and DECKER), 1911, A., i, 666.
- 3-*p*-Anisyl-2-methyl-4-dihydroquinazolinone** (BOGERT and BEAL), 1912, A., i, 394.
methiodide (BOGERT and GEIGER), 1912, A., i, 511.
- Anisyl methyl 1:2-diketone**, *amphi*-dioxime of (WIELAND), 1904, A., i, 56.
- Anisylmethylfuran**, chloro- (WIELAND and SEMPER), 1908, A., i, 108.
- 8-Anisyl- α -methylglycidic acid**, ethyl ester (DARZENS), 1906, A., i, 137.
- 4-Anisyl-1-methyl-3-cyclohexanol and -hexanone** (HALLER and MARCH), 1905, A., i, 771.
- 2-Anisyl-3-methylindole** (HELL and COHEN), 1904, A., i, 343.
- Anisyl methyl ketone**, *o*-iodo-, and its dichloride (WILLGERODT and BURKHARD), 1912, A., i, 630.
- β -Anisyl- α -methyl- β -phenylhydracrylic acid**, ethyl ester (STOERMER and FRIDERICI), 1908, A., i, 181.
- 3-*p*-Anisyl-2-methyl-4-quinazolinone**, 7-amino-, acetyl derivative (BOGERT, AMEND, and CHAMBERS), 1910, A., i, 895.
- β -Anisyl- β -methylvinyl alcohol** and its methyl ether and acetyl derivative (TIFFENEAU and DAUFRESNE), 1907, A., i, 515, 1035.
- Anisyl- α -naphthylcarbinol** (SCHURAKOVSKY), 1910, A., i, 169.
- β -Anisyl- α -naphthyl- and -1:3:4-xylylosazones** (PADOA and BOVINI), 1912, A., i, 224.
- 1-*p*-Anisyl-3-*m*-nitrobenzylidenerhodanene** (ANTULICH), 1910, A., i, 765.
- Anisylidinitromethane** and its metallic derivatives (PONZIO), 1906, A., i, 735.
- Anisylisooxazoline**, isonitroso-, and its benzoyl and methyl derivatives (WIELAND and SEMPER), 1908, A., i, 109.
- Anisylloxazolinone**, and oximino-, panchromatic salts of (HANTZSCH and HEILBRON), 1910, A., i, 199.
- β -Anisyl- β -2-cyclopentanonylpropio-phenone** and its disemicarbazone (STRIEGLER), 1912, A., i, 782.
- Anisylphenetylacetonitrile** (BISTRZYCKI, PAULUS, and PERRIN), 1911, A., i, 869.
- o*-Anisylphenylethane**. See *o*-Methoxy-*aa*-diphenylethane.
- o*-*o*-Anisyl- α -phenylethylene**. See *o*-Methoxy-*aa*-diphenylethylene.
- 3-Anisyl-5-phenylisooxazole** (MOUREU and BRACHIN), 1904, A., i, 96.
- Anisylphenylpropiophenone** (KÖHLER), 1907, A., i, 1053.
- 1-Anisylpiperidine** and its picrate (KÖNIGS and BERNHART), 1908, A., i, 285.

- β -Anisylpivalic acid, β -hydroxy-** See *β p-Anisyl- α -dimethylpropionic acid, β -hydroxy-*.
- Anisyleyclopropanol** See *β -Anisyl- β -methylvinyl alcohol*.
- α -Anisylpropylamine and its derivatives** (BUSCH and LEEFHELM), 1908, A., i, 153.
- 4-*p*-Anisylpyridazine** (STOERMER and GAUS), 1912, A., i, 1027.
- 4-*p*-Anisylpyridazine-5-carboxylic acid**, and amino-, and nitro- (STOERMER and GAUS), 1912, A., i, 1027.
- 5-Anisyl-3-pyrrolone, 4-amino- and 4-nitro-** (WIELAND and BLOCH), 1905, A., i, 707.
- Anisylquinine** (VEREINIGTE CHININ-FABRIKEN ZIMMER & Co.), 1903, A., i, 50.
- 2-Anisyl-quinol and its dibenzoyl derivative and -quinone** (STOLLÉ and MÖRING), 1904, A., i, 875.
- p*-Anisylrhodanine** (ANTULICH), 1910, A., i, 764.
- 3-*p*-Anisyl-2-styryl-4-dihydroquinazolinone** (BOGERT and BEAL), 1912, A., i, 394.
- 5-Anisyl-2-styryloxazole** (LISTER and ROBINSON), 1912, T., 1306.
- Anisylsulphone** (SMILES and LE ROSIGNOL), 1908, T., 755.
- Anisylterephthalic acid** (THIELE and GIESE), 1903, A., i, 425.
- Anisylthiocarbimide** (v. BRAUN and DEUTSCH), 1912, A., i, 694.
- p*-Anisylthiosulphonic acid, *p*-phenylenediamine salt** (TRÖGER and VOLKMER), 1905, A., i, 89.
- Anisyltrimethylammonium iodide** (WEDEKIND and FRÖHLICH), 1906, A., i, 162.
- γ -Anisylvaleric acid, β -iodo- γ -hydroxy-, lactone of** (BOUGAULT), 1908, A., i, 538.
- Ankerite from the Sylvester mine, Vosges, Alsace** (UNGEMACH), 1906, A., ii, 766.
- occurrence of, in coal (CROOK), 1912, A., ii, 565.
- Annabergite, artificial production of** (DE SCHULTEN), 1903, A., ii, 655.
- Ännerödite, composition of** (BRÖGGER), 1907, A., ii, 886.
- Anniversary dinner**, 1903, P., 88 ; 1905, P., 106 ; 1907, P., 102 ; 1909, P., 109.
- Annual General Meeting**, 1903, T., 629 ; P., 81 ; 1904, T., 477 ; P., 65 ; 1905, T., 535 ; P., 99 ; 1906, T., 735 ; P., 93 ; 1907, T., 615 ; P., 95 ; 1908, T., 763 ; P., 81 ; 1909, T., 611 ; P., 101 ; 1910, T., 651 ; P., 73 ; 1911, T., 577 ; P., 77 ; 1912, T., 639 ; P., 75.
- Anode or anodes, absorption of gases by**, in glow discharge (CHRISLER), 1909, A., ii, 961.
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- and copper (FISCHER), 1904, A., ii, 534.
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- carbon, cells with (BECHTEREFF), 1912, A., ii, 226.
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- copper, valvular action and pulverisation of (FISCHER), 1903, A., ii, 587.
- decomposition of (TOMMASI), 1904, A., ii, 734.
- behaviour of the, in electrolysis of hydrochloric acid (DUSHMAN), 1911, A., ii, 181.
- electrolytic, classification of the behaviour of (SCHULZE), 1908, A., ii, 350.
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- iron, passivity of the (SCHOCH and RANDOLPH), 1911, A., ii, 14.
- lead, irregularities caused by the use of, in solutions of sodium carbonate (ELBS and STOHR), 1903, A., ii, 587.
- lead peroxide as, in the electrolytic oxidation of chromium sulphate to chromic acid (MÜLLER and SÖLLER), 1906, A., ii, 66.
- magnesium, behaviour of (BABOROVSKÝ), 1905, A., ii, 671.
- nickel, behaviour of, and the phenomena of passivity (SCHOCH), 1909, A., ii, 370.

- Anode or anodes**, passivity of the (SCHOCH and RANDOLPH), 1911, A., ii, 14.
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- Anodonta**, manganese a normal element in the tissues of (BRADLEY), 1907, A., ii, 567.
- Anona muricata**, chemical examination of the leaves of (CALLAN and TUTIN), 1912, A., ii, 81.
- Anophorite**, a new hornblende from the Katzenbuckel (FREUDENBERG), 1910, A., ii, 721.
- Anorthite**, equilibrium of, with nephelite and with carnegieite (BOWEN), 1912, A., ii, 774.
- Anorthite bomb** from St. Christopher, West Indies (FELS), 1903, A., ii, 557.
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preparation of isomeric sulphonic acids of, by means of catalytic agents (ILJINSKY), A., i, 176; (SCHMIDT), 1904, A., i, 256.

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derivatives, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 564, 640; 1906, A., i, 678; 1910, A., i, 396; 1911, A., i, 884, 1026; 1912, A., i, 140, 141, 1020; (LAUBE), 1907, A., i, 941; (HARROP, NORRIS, and WEIZMANN), 1909, T., 1312; P., 203; (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 996; (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), 1912, A., i, 1035.

quinonoid properties of (SCHOLL and v. WOŁODKOWITSCH), 1911, A., i, 888.

behaviour of, with alkaline reducing agents (SEER and KARL), 1912, A., i, 571.

use of, as mordant dyes (v. GEORGIEVICS), 1911, A., i, 546.

colour and affinity for mordants of, (HELLER), 1908, A., i, 995; (HELLER and GRÜNTAL), 1910, A., i, 859.

aryl ethers of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 797.

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azine derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 720, 797.

preparation of halogen derivatives of (BADISCHE ANILIN- & SODA FABRIK; FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 466.

amino- and hydroxy-derivatives, and their halogen compounds, preparation of (BASLER CHEMISCHE FABRIK), 1904, A., i, 512.

Anthraquinone, *mono- and diamino-derivatives*, chlorination of (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 99.

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bromoamino-, bromonitroamino-, and nitroamino- derivatives (BADISCHE ANILIN- & SODA-FABRIK), 1904, A., i, 433.

bromonitro- and chloronitro-derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 498.

chloroamino- derivatives, and their *N*-acyl derivatives, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1908, A., i, 994.

hydroxy- derivatives, methylation of (GRAEBE), 1906, A., i, 863.

methyl ethers of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 362; (PERKIN), 1907, T., 2066; P., 288.

and their sulphonic acids, connexion between the constitution and the colour and dyeing power with mordants of the (v. GEORGIEVICS), 1905, A., i, 447.

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colour reactions of (PIÑERŪA ALVAREZ), 1907, A., ii, 143.

α-hydroxy-derivatives, preparation of *p*-nitro-derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 868.

methoxy-derivatives (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 709.

nitro-derivatives, electrochemical reduction of (MÖLLER), 1904, A., i, 345.

nitroamino-derivatives (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 447.

carbamates of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 677.

iodo-hydrido-compounds of non-nitrogenous derivatives of (LIEBERMANN and MAMLOCK), 1905, A., i, 531.

containing nitrogen, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 456.

oxazine derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 934.

preparation of pyrazoles from (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 904.

Anthraquinone, preparation of sulphur derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 325.

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Anthraquinone, 1-amino- (ULLMANN and FODOR), 1911, A., i, 466.

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oxamic acid of, and 1:5-diamino-, dioxamic acid of (NOELTING and WORTMANN), 1906, A., i, 292.

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1- and 2-amino-, benzoyl-*p*-aminobenzoyl derivatives of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 197.

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2-*mono*- and 1:5-diamino-, and their nitro-amines, and their bromo- and nitro-derivatives, and 1:2:3-triamino- (SCHOLL, SCHNEIDER, and EBERLE), 1905, A., i, 70.

o-amino-, condensation products of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 995.

1:2-diamino-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 469.

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2:3-diamino-, and its sulphate and diacetyl derivative and reactions (SCHOLL and KAČER), 1905, A., i, 88.

2:6-diamino- and *mono*- and 2:6-dibromo- (KAUFLEER and IMHOFF), 1905, A., i, 124.

1-amino-5-cyano-, 5-chloro-1-amino-, 5-chloro-1-thiocyano-, 1-iodo-4-nitro-, 1- and 2-thiocyano-, 1-thiocyano-4- and -5-amino-, 1-thiocyano-4-hydroxy-, 1-thiocyano-3:4-dihydroxy-, 1:4-, 1:5-, and 1:8-dithiocyano-, and their derivatives (GATTERMANN), 1912, A., i, 999.

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3-amino-1-hydroxy-, 3-nitro-1-hydroxy-, and 3-nitro-2-nitroamino-1-hydroxy- (SCHOLL, SCHNEIDER, and EBERLE), 1905, A., i, 70.

5- and 8-amino-1-hydroxy- (SCHMIDT), 1904, A., i, 257.

4-amino-1-thiocyano-, and 1:4-dithiocyano- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 338.

2-bromo-, 2-chloro-, 2-iodo-, and 2-nitro- (KAUFLEER), 1904, A., i, 256.

2-bromo- α -amino- and 2-bromo-5-nitro- α -amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 910.

3-bromo-2-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 995.

4-bromo-1-amino-, benzoyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 469.

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1:4-*dibromo*-2-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 797.

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2:7-*dibromo*-1:6-*diamino*-, 2:7-*dibromo*-1:4:6:9-*tetra*amino-, and its tetrabenzoyl derivative, and 2:7-*dibromo*-4:9-*dinitro*-1:6-*dinitro*amino- (SCHOLL and KRIEGER), 1905, A., i, 145.

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1:5-*di*bromo-4-nitro-, and 1:5- and 1:8-*dichloro*-4-nitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 995.

2:4-*dibromo*-5-nitro-1-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 813.

2:7-*dibromo*-4:9-*dinitro*-1:6-*dinitro*amino-, action of aromatic bases on the nitroamino- groups of (SCHOLL and KRIEGER), 1905, A., i, 145.

1-chloro-, and 1:5-*dichloro*-, oximes of (FREUND and ACHENBACH), 1911, A., i, 70.

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1:2-, and 2:3-*dichloro*- (ULLMANN and BILLIG), 1911, A., i, 491.

1:4-*dichloro*-, 1:4-*di*chloro-5-amino-, its acetate and acetyl derivative, and 1:4-*di*chloro-5-nitro- (WALSH and WEIZMANN), 1910, T., 687; P., 61.

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1-chloro-2-hydroxy-, and its acetyl derivative (DECKER and LAUBE), 1906, A., i, 192.

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2-hydroxy-, methyl ether of (GRAEBE and BERNHARD), 1906, A., i, 865.

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2:3-*dihydroxy*-. See Hypsazarin.

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Anthraquinone, trihydroxy-, mono-
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2-iodo- (ULLMANN), 1910, A., i, 751.

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1:5-*dinitro-*, action of aromatic amines
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1-nitro-5- and -8-amino- (FARBENFA-
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1:2-*dithiocyano-* (LENHARD), 1912,
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i, 290; (LAGODZINSKI), 1906, A., i,
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photodynamic and optical behaviour
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(FARBENFABRIKEN VORM. F.
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- Anthraquinone series**, azines of the (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 905.
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- Anthraquinoneacridone** (ULLMANN), 1910, A., i, 697.
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- Anthraquinone-1:2-acridone** (ULLMANN and SONE), 1911, A., i, 468.
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- Anthraquinone-2:1-acridone**, -4-amino-, and 4-chloro- (ULLMANN and BILLIG), 1911, A., i, 491.
- Anthraquinone-1:2-acridoneazine** (ULLMANN and SONE), 1911, A., i, 468.
- β -Anthraquinonealdehyde** and its 4-bromo-1-hydroxy- and 1-chloro-derivatives (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 224.
- Anthraquinone-1-anilino-*o*-carboxylic acid** (ULLMANN and OCHSNER), 1911, A., i, 489.
- Anthraquinone-2-anilino-*o*-carboxylic acid** (ULLMANN and SONE), 1911, A., i, 468.
- 1:2:1':2'-Anthraquinoneanthranolazine** (SCHOLL and STEGMÜLLER), 1907, A., i, 354.
- Anthraquinoneazhydrine** (SCHOLL and BERBLINGER), 1904, A., i, 110.
- Anthraquinoneazine** (SCHOLL and BERBLINGER), 1904, A., i, 110.
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- Anthraquinoneazine**, chloro- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 158.
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- Anthraquinone-1:5-bisanthranilic acid** (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 885.
- Anthraquinone-1:6-bisazoxydimethyl-aniline**, 2:7-dibromo-4:9-dinitro- (SCHOLL and KRIEGER), 1905, A., i, 146.
- Anthraquinone-1:5-bisdiazonium sulphate**, 2:6-dibromo- (SCHOLL, EBERLE, and TRITSCH), 1912, A., i, 144.
- Anthraquinone-2:1:6:5-bisquinonedi-azide** (SCHOLL, EBERLE, and TRITSCH), 1912, A., i, 144.
- Anthraquinone-1:5-bis-*o*-thiolbenzoic acid** (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 885; (ULLMANN and KNECHT), 1911, A., i, 1010.
- Anthraquinone-1:8-bis-*o*-thiolbenzoic acid** (ULLMANN and KNECHT), 1911, A., i, 1010.
- Anthraquinone-2:1:6:5-, and 2:1:7:8-bisthioxanthone** (ULLMANN and KNECHT), 1911, A., i, 1011.
- Anthraquinonecarbamide chloride**, 1-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 167.
- Anthraquinone-3-carbonamide-2-carboxylic acid** (WILLGERODT and MAFFEZZOLI), 1910, A., i, 678.
- Anthraquinonecarboxy-1-aminoanthraquinone**, amino-, benzoyl derivative (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 198.
- Anthraquinone-1-carboxylamide and -1-nitrile** (DIENEL), 1906, A., i, 291.
- Anthraquinone-1-carboxylic acid**, 5-amino-, 2-bromo-, and 5-nitro- (ULLMANN and VAN DER SCHALK), 1912, A., i, 387.
- Anthraquinone-1- or -2-carboxylic acid**, 2- or 3-chloro- (HELLER and SCHÜLKE), 1908, A., i, 995.
- Anthraquinone-2-carboxylic acid chloride**, interaction of, with 2-aminoanthraquinone (SEER and WEITZENBÖCK), 1910, A., i, 570.
- Anthraquinone-2-carboxylic acid**, 1-amino- (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1912, A., i, 981.
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- Anthraquinone-4-carboxylic acid**, 1-amino-, and 1-thiocyano- (GATTERMANN), 1912, A., i, 1001.
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- Anthraquinone-5-carboxylic acid**, 1-amino-, and 1-thiocyano- (GATTERMANN), 1912, A., i, 1001.
- Anthraquinone-4'-chloro-1:2-dihydrophenazine** (ULLMANN and FODOR), 1911, A., i, 468.
- Anthraquinone-2:1:6:5-diacridone** (ULLMANN and OCHSNER), 1911, A., i, 490.

1:5-Anthraquinonediacridone (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 804.

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Anthraquinone-1:2-dicarboxylic acid (SCHOLL), 1912, A., i, 361.
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Anthraquinone-2:6-dicarboxylic acid, chloride and amide of (SEER), 1911, A., i, 386.

Anthraquinone-2:3-dicarboxylimide potassium derivative of (WILLGERODT and MAFFEZZOLI), 1910, A., i, 679.

Anthraquinonedihomosalicic acid, *tri*- and *hepta*-bromo-, and *tri*-iodo-, and their salts (CLEMMENSEN and HEITMAN), 1911, A., i, 543.

Anthraquinone-1:2-dihydro-4'-methylphenazine (ULLMANN and FODOR), 1911, A., i, 468.

Anthraquinone-1:2-dihydrophenazine (ULLMANN and FODOR), 1911, A., i, 467.

Anthraquinonedioxamic acids, *dinitro-diamino*- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 653.

Anthraquinone-2:6-dioxydiacetic acid, 4:8-*dihydroxy*- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 649.

Anthraquinone-1:5- and -1:8-disulphonic acids (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 361.

Anthraquinone-3:5- and -3:8-disulphonic acids, 1:2-*dihydroxy*- (WEDEKIND & Co.), 1904, A., i, 811.

Anthraquinone-di- and -tri-sulphonic acids, preparation of (WEDEKIND & Co.), 1906, A., i, 677.

Anthraquinonedithioxanthone (ULLMANN), 1912, A., i, 126.

Anthraquinonefluorescein, and its salts and diacetyl derivative, and *di*bromo-, and *tetra*bromo- (WILLGERODT and MAFFEZZOLI), 1910, A., i, 679.

Anthraquinoneimide, *p*-dimethylamino-anil of (KAUFLER and SUCHANNEK), 1907, A., i, 225.

Anthraquinoneimide, 2-amino-1-hydroxy-, and its acetyl and potassium derivatives (SCHOLL and PARTHEY), 1906, A., i, 440.

Anthraquinoneimidephenylhydrazone.

See 10-Benzeneazoanthracene, 9-amino-.

Anthraquinoneiminazole, 1:2-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 140.

Anthraquinone 1- and 2-mercaptans (FARBWERKE VORM. MEISTER, LUCIUS & BRÜNING), 1912, A., i, 477.

Anthraquinoneoxycetic acids (*anthraquinoneglycollic acids*), and their esters and salts (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 648.

Anthraquinone-1:2-phenazine (ULLMANN and FODOR), 1911, A., i, 467.

Anthraquinone- β -phenylhydrazone. See 10-Benzeneazoanthranol.

Anthraquinonequinoline. See Anthraquinolinequinone.

Anthraquinone-2:1-quinonediazide, 4:6:8-*tribromo*-5-hydroxy- (SCHOLL, EBERLE, and TRITSCH), 1912, A., i, 144.

α -Anthraquinonesulphenic acid and its salts and esters (FRIES and ENGELBERTZ), 1912, A., i, 1006.

α -Anthraquinonesulphenyl bromide and chloride (α -bromo- and α -chlorothiol-anthraquinones) (FRIES and ENGELBERTZ), 1912, A., i, 1005.

α -Anthraquinonesulphinic acid (FRIES and ENGELBERTZ), 1912, A., i, 1006.

Anthraquinone-2-sulphonamide (ULLMANN), 1910, A., i, 751.

Anthraquinone-2-sulphon α -chloroamide (CHATTAWAY), 1905, T., 157; P., 7.

Anthraquinonesulphonic acid, aminodi-hydroxy- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 654.

hydroxy-, preparation of (WEDEKIND & Co.), 1908, A., i, 661.

dihydroxy- (WEDEKIND & Co.), 1906, A., i, 677.

1:2:5-*trihydroxy*-. See Anthrarufin-sulphonic acid, hydroxy-.

Anthraquinone-1-sulphonic acid (DÜNSCHMANN; LIEBERMANN, and PLEUS), 1904, A., i, 326; (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 513.

and its derivatives, replacement of a sulphonic group by hydroxyl in (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 807.

amino- and nitro-derivatives (SCHMIDT), 1904, A., i, 256.

Anthraquinone-1-sulphonic acid, 5-and 8-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 942.
 5-chloro-, and 5-bromo-, potassium salts (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 242.
 5-hydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 653.
 5-and 8-hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 807.
Anthraquinone-2-sulphonic acid, condensation products from primary aromatic amines and (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 433.
 cerium salt (ERDMANN and NIESZYTKA), 1908, A., i, 622.
Anthraquinone-2-sulphonic acid, 7-amino-, and its salts, and *N*-acetyl derivative (KAUFLER), 1907, A., i, 308.
 3:4-diamino- (FARBWERKE VORM. MEISTER, LUCIUS & BRÜNING), 1911, A., i, 469.
 8-amino-5-hydroxy-, and its esters (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 146.
 1-amino-3:4-dihydroxy-. See Alizarin-3-sulphonic acid, 4-amino-bromo-, sodium salt and 1:4-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 270.
 5:8-dichloro-, sodium salt (WALSH and WEIZMANN), 1910, T., 688.
 5-nitro-, sodium salt (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 940.
Anthraquinonesulphonic acids, elimination of the sulpho-group from (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 911.
 halogen, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 396.
 amino-, azo-dyes from (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 323.
 aminohydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 293.
 hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 866.
 polyhydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 519.
Anthraquinone-1-sulphonic acids (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 677.

Anthraquinone-5-6-, -7-, and -8-sulphonic acids, 1-amino-, 1-thiocyano-, and their derivatives (GATTERMANN), 1912, A., i, 1001.
Anthraquinone- α -sulphonic acids (R. WEDEKIND & Co.), 1909, A., i, 242.
Anthraquinone-2-sulphonyl chloride, interaction of, with 1-amino- and 1:5-diamino-anthraquinones (SEER and WEITZENBÖCK), 1910, A., i, 571.
Anthraquinone-1:2-thiazole, 4-amino-, benzoyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 1020.
Anthraquinone-1-*o*-thiolbenzoic acid (ULLMANN and KNECHT), 1911, A., i, 1010.
Anthraquinonethioxanthone (ULLMANN), 1912, A., i, 126.
Anthraquinone-2:1-thioxanthone (ULLMANN and KNECHT), 1911, A., i, 1010.
Anthraquinone-1-*p*-toluidinosulphonic acid, 4-hydroxy- (FRIEDLÄNDER and SCHICK), 1904, A., i, 69.
Anthraquinoneurethane, 1-amino-, 1:4-diamino-, and 4-chloro-1-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 167.
2-Anthraquinoneurethane, 1-chloro- and 1:5-Anthraquinoneurethane, 4:8-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), 1908, A., i, 994.
Anthraquinonexanthones (ULLMANN and ÜRMÉNYI), 1912, A., i, 716.
1-Anthraquinonyl thiocyanate, 2-bromo- (LENHARD), 1912, A., i, 997.
2-Anthraquinonyl thiocyanate, 1-amino- (LENHARD), 1912, A., i, 997.
2-Anthraquinonylamino benzoic acid, 4-bromo- (ULLMANN), 1912, A., i, 114.
5-Anthraquinonyl- β -amino-6-chloro-quinizarin (FREY), 1912, A., i, 477.
4- β -Anthraquinonylamino-1-*N*-methyl-anthrapyrimidone (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 445.
 α -Anthraquinonyl-*p*-aminophenyl-pyridazonanthrone (ULLMANN and VAN DER SCHALK), 1912, A., i, 388.
4- α - and β -Anthraquinonylamino-*N*-phenylpyridazonanthrones (ULLMANN and MINAÉEFF), 1912, A., i, 389.
Anthraquinoylanthraquinone, 1:4-di-amino- (ULLMANN and BILLIG), 1911, A., i, 491.

4-Anthraquinoylanthraquinone-2:1-acridone, α -amino- (ULLMANN and BILLIG), 1911, A., i, 491.

4-(2'')-Anthraquinonylbenzophenone-2'-carboxylic acid (SCHOLL and NEOVIUS), 1911, A., i, 453.

***N*-Anthraquinonylcarbazole** (LAUBE), 1907, A., i, 942.

β -Anthraquinonylcarbimide (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 750.

Anthraquinonyl-1-, and -2-diazonium hydrogen sulphates (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

2-Anthraquinonyl-4-diazo-1-phenyl-3-methyl-5-pyrazolone (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

Anthraquinonyl-1-diazosulphonic acid, potassium salt (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

Anthraquinonyl-1:5-diquinoline (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 365.

$\beta\beta'$ -Anthraquinonylenedicarboxyl chlorides, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 119.

Anthraquinonylene-1:5-, and -2:6-dihydrazines (MÖHLAU, VIERTEL, and REDLICH), 1912, A., i, 705.

1-Anthraquinonylglycine (SEER and WEITZENBÖCK), 1910, A., i, 571.

α -, and β -Anthraquinonylglycines (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 548.

Anthraquinonyl-1-hydrazine and its hydrochloride (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

5- and 8-chloro- (MÖHLAU, VIERTEL, and REDLICH), 1912, A., i, 705.

Anthraquinonyl-2-hydrazine and its hydrochloride (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

Anthraquinonyl-1- and -2-hydrazinedisulphonic acids, potassium salts (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

Anthraquinonyl-2-hydrazinesulphonic acid, potassium salt (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 705.

Anthraquinonyl-1- and -2-hydrazone-acetoacetic acid, ethyl ester (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.

α -Anthraquinonyl $\alpha[\beta$ -hydroxy-naphthyl] sulphide and its salts (FRIES and ENGELBERTZ), 1912, A., i, 1005.

Anthraquinonyl-*N*-methyl-dihydro-*p*-toluazine and 3-bromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1085.

1-Anthraquinonyl-*o*-naphthylenediamine. See 1-Naphthylaminoanthraquinone, *o*-amino-.

β -Anthraquinonyl-1:2-naphthylene-triazole, amino- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 588.

1-Anthraquinonyloximide, 2:4-dibromo- (LENHARD), 1912, A., i, 998.

***o*-1-Anthraquinonyloxybenzaldehyde and its derivatives** (ULLMANN and ÜRMÉNYI), 1912, A., i, 716.

***o*-1-Anthraquinonyloxybenzoic acid** (ULLMANN and ÜRMÉNYI), 1912, A., i, 716.

***N*- α -Anthraquinonylpyridazonanthrone** (ULLMANN and VAN DER SCHALK), 1912, A., i, 388.

Anthraquinonylquinoline. See Anthraquinolinequinone.

1:2-Anthraquinonylsulphonaminoanthraquinone (ULLMANN), 1910, A., i, 751.

1-Anthraquinonylthiolacetic acid and its derivatives and 4-amino-, and 5-chloro- (GATTERMANN), 1912, A., i, 1003.

2-Anthraquinonylthiolacetic acid and its derivatives (GATTERMANN), 1912, A., i, 1004.

1- β -Anthraquinonylthiolanthraquinone-2-carboxylic acid (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 468.

Anthraquinonylurethane. See Anthraquinoneurethane.

Anthraquino-1-thiazole, and 4- and 5-amino-, and 5-thiocyano- (GATTERMANN), 1912, A., i, 1005.

Anthraquino-1-thiazole-4-carboxylic acid (GATTERMANN), 1912, A., i, 1005.

Anthraquinothiophen (GATTERMANN), 1912, A., i, 1004.

Anthraquinoxalinequinone, $\alpha\beta$ -dihydroxy- ($\alpha\beta$ -dihydroxy-1-2-pyrazinoanthraquinone), and its sodium derivative and amino- $\alpha\beta$ -dihydroxy-, and nitro- $\alpha\beta$ -dihydroxy- (SCHOLL and EDL-BACHER), 1911, A., i, 756.

Anthraquinyll methyl and ethyl ethers (MEYER), 1911, A., i, 195.

Anthrarufin (1:5-dihydroxyanthraquinone), preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 176.

dimethyl ether monoxime (FREUND and ACHENBACH), 1911, A., i, 70.

Anthrarufin (1:5-dihydroxyanthraquinone), *p*-diamino-, dialkyl ether, sulphonic acids of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 902.

4:8-diamino-, alkylated, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 1057.

p-mono- and *p*-dichloro-, preparation of (WEDEKIND & Co.), 1906, A., i, 678.

hydroxy-, and its triacetyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 532; 1907, A., i, 1057; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 807.

ethers of (GRAEBE and THODE), 1906, A., i, 863.

p-dinitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 868.

Anthrarufindisulphonic acid, diamino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 808.

p-dibromo-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 808.

dinitro-, reduction product of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 867.

Anthrarufinsulphonic acid, hydroxy- (GRAEBE), 1906, A., i, 863.

Anthrarufin-3-sulphonic acid, hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1057.

1-Anthrathiazine (LAUBE and LIBKIND), 1910, A., i, 494.

1-Anthrathiazole and 4- and 5-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 338.

1-Anthrathiazole-4-mercaptan (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 338.

1-Anthrathiazole-8-sulphonic acid, 4-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 338.

Anthratriquinonedihomosalicyelic acid and its salts and derivatives (CLEMMENSEN and HEITMAN), 1911, A., i, 543.

Anthrax serum, the active constituent of (ASCOLI), 1906, A., ii, 687.

1:2:1':2'-Anthrazine (SCHOLL and BERBLINGER), 1904, A., i, 111.
preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 868.

1:2:1':2'-Anthrazine and its sulphate, picrate, and octabromo-derivative (SCHOLL, BERBLINGER, and KÜNZEL), 1907, A., i, 354.

1-Anthrol (SCHMIDT), 1904, A., i, 257.
and its acetyl derivative and methyl and ethyl ethers (DIENEL), 1905, A., i, 767.

1-Anthrol, 2-amino-, and its triacetyl derivative, 2-nitroso-, and its ethers and potassium salt, and 4-nitroso-, and its salts (DIENEL), 1906, A., i, 290.

4-amino- (LAGODZINSKI), 1906, A., i, 439.

2-Anthrol, 1-amino-, and its acetyl derivatives and salts, and 1-nitroso-, and its metallic salts and ethers (LAGODZINSKI), 1906, A., i, 98.

Anthrone (MEYER), 1911, A., i, 194.
benzylidene derivatives of (HALLER and PADOVA), 1906, A., i, 24.

Anthrone, trihydroxy-, and its monoethyl ether (GRAEBE and THODE), 1906, A., i, 865.

nitro-, and its dimethylacetal, isonitro-, and its salts, and bromonitro- (MEISENHEIMER and CONNERADE), 1904, A., i, 393.

and salts of *aci*-form (HANTZSCH and KORCZYŃSKI), 1909, A., i, 394.

Anthroneisooxazole, and 1-chloro- (FREUND and ACHENBACH), 1911, A., i, 70.

Anthroxanaldehyde, oxime of (HELLER and TISCHNER), 1910, A., i, 65.

Anthroxanic acid (2-anthranilcarboxylic acid) (REISSERT), 1909, A., i, 52.
preparation of (KALLE & Co.), 1908, A., i, 421, 646.

relation between anthranil and (BAMBERGER and LINDBERG), 1910, A., i, 189.

ethyl and methyl esters (HELLER, FRANTZ, and JÜRGENS), 1911, A., i, 864.

Anthroxanic acid, 5-bromo- (HELLER and FRANTZ), 1910, A., i, 849.

β -Anthrilydimethylsulphine hydroxide, salts of (KEHRMANN and SAVA), 1912, A., i, 968.

Anti-agglutination by bacteria (WEIL), 1911, A., ii, 619.

Anti-albumid (ROTARSKI), 1903, A., i, 667.

Anti-amylase, serum containing (GESARD and WOLFF), 1908, A., i, 379.

Antianilopyrine and its additive compounds (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 731.

Anti- ψ -anilopyrine and its platinum-chloride (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 733.

Antiarin, physiological action of (SELIGMANN), 1903, A., ii, 314.

β -Antiarin (KILIANI), 1911, A., i, 138.

Antiaris toxicaria, resin from (WINDAUS and WELSCH), 1908, A., i, 903.

crystalline protein from the latex of (KOTAKE and KNOOP), 1912, A., ii, 81.

constituents of the sap of (KILIANI), 1911, A., i, 138.

Antiarol (5-hydroxy-1:2:3-trimethoxybenzene) (GRAEBE and SUTER), 1905, A., i, 703.

constitution of (THOMS and SIEBELING), 1911, A., i, 724.

Anti-catalase in animal tissues (BATTELLI and STERN), 1905, A., ii, 406.

can the existence of an, be demonstrated? (DE WAELE and VANDELDELDE), 1908, A., i, 491; (BATTELLI and STERN), 1908, A., i, 589.

Anti-coagulating substance, secreted by the liver (DOYON), 1910, A., ii, 427.

Antidiastase, presence of, in malt infusions (VANDELDELDE), 1910, A., ii, 645.

Anti-emulsin, synthetic properties of (BAYLISS), 1912, A., i, 328.

Anti-enzymes and enzymes, reaction between (MINAMI), 1912, A., ii, 362.

Antifebrin. See Acetanilide.

Antiferments (BOURQUELOT and HÉRISSEY), 1903, A., i, 544; (KANITZ), 1903, A., ii, 661; (BEITZKE and NEUBERG), 1905, A., ii, 336.

and enzymes (JACOBY), 1907, A., i, 811; ii, 108; 1908; A., i, 236; ii, 743.

Antigens, function of the spleen in the fixation of (LUCKHARDT and BECHT), 1911, A., ii, 812.

Antigorite, pseudo-cubic, from Sweden (HAMBERG), 1904, A., ii, 745.

Anti-iminopyrine and its additive compounds and **Anti- ψ -iminopyrine** (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 733.

Anti-inulase (SAIKI), 1907, A., ii, 973.

Antikinase, kinase, and protrypsin (DASTRE and STASSANO), 1903, A., ii, 497.

Antilaccase (GESSARD), 1903, A., ii, 316.

Antileucoprotease (BRADLEY), 1910, A., i, 795.

Antimonic acid. See under Antimony.

Antimonichlorides. See under Antimony organic compounds.

Antimon-luzonite (*stibio-luzonite*) (STEVANOVIĆ), 1903, A., ii, 301.

Antimony, atomic weight of (COHEN and STRENGERS), 1903, A., ii, 432.

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Antimony, action of, on trypanosome infection (MORGENROTH and ROSENTHAL), 1911, A., ii, 632.

Antimony alloys with aluminium (PÉCHEUX), 1904, A., ii, 618; (TAMMANN), 1906, A., ii, 88.

with arsenic (PARRAVANO and DE CESARIS), 1912, A., ii, 262.

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with bismuth and copper (PARRAVANO and VIVIANI), 1910, A., ii, 779, 852, 956, 1068.

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with copper, and the phenomenon of recalescence observed in them (BAIKOFF), 1904, A., ii, 346.

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with iron (PORTEVIN), 1911, A., ii, 898.

with lead (GONTERMANN), 1907, A., ii, 968.

hardness and microstructure of (SAPOSHNIKOFF and KANEWSKY), 1907, A., ii, 869.

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with magnesium (GRUBE), 1906, A., ii, 355.

with manganese, magneto-optical properties of (MARTIN), 1912, A., ii, 1039.

with nickel (LOSSEW), 1906, A., ii, 361.

with palladium (SANDER), 1912, A., ii, 651.

Antimony alloys with platinum (FRIEDRICH and LEROUX), 1909, A., ii, 245.

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with sodium (MATHEWSON), 1906, A., ii, 666.

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Arsenic-digallic acid (BIGINELLI), 1909, A., i, 802.

Arsenic group, rapid method of estimating the metals of the, exclusive of gold or platinum (MATERNE), 1906, A., ii, 807.

Arsenic minerals as fumarole-products in the recent eruption of Vesuvius (LACROIX), 1907, A., ii, 33.

Arsenic phosphorus group, allotropic modifications of the elements of the (LINCK), 1908, A., ii, 176, 373; (ERDMANN), 1908, A., ii, 275.

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Arsenious p-iodophenyl iodide (MAMELI and PATTÀ), 1909, A., i, 543.

Arseni-tartaric and -citric acids, preparation of iron salts of (SORGER), 1909, A., i, 464.

Arsenoacetylthranilic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 84.

Arsenoalbumin, preparation of (KLOPFER), 1910, A., i, 292.

Arsenoaryl-oxy- and -thio-acetic acids, (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 452.

Arsenobenzene, toxicity of solutions of (FLEIG), 1912, A., ii, 469.

Arsenobenzene, 4:4'-diamino-, and its salts (EHRlich, BERTHEIM, and SCHMITZ), 1911, A., i, 594.

4:4'-diaminodihydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 347.

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3:3'-diamino-4:4'-dihydroxy-, and its hydrochloride (*salvarsan*), preparation and properties of (EHRlich and BERTHEIM), 1912, A., i, 524.

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4:4'-diamino-3:3'-dihydroxy-, and its salts (BENDA), 1912, A., i, 148; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 596.

5:5'-diamino-2:2'-dihydroxy-, and its hydrochloride (BENDA), 1912, A., i, 62.

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Arsenobenzene-3:3'-bistrimethylammonium hydroxide, 4:4'-dihydroxy- (BERTHEIM), 1912, A., i, 819.

Arseno-*o*-cresol (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 347.

Arsenocresol, diamino- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 804.

Arsenoferrite (BAUMHAUER), 1912, A., ii, 949.

Arsenomandelic acid and its sodium salt (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 452.

Arsenomolybdic acid, guanidinium salt of (ROSENHEIM and PINSKER), 1911, A., i, 266.

Arseno-oxanilic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 348.

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Arsenophenols, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 347.

Arsenophenols, tetrabromo-, tetrachloro-, and tetraiodo- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 1055.

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- p*-**Arseno-*o*-tolylglycine** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 84.
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- Arylaeylaminonaphtholsulphonic acids**, amino-, preparation of (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1906, A., i, 659.
- 2-Arylalkylamino-5-methyl-4:5-dihydrothiazoles**, oxidation and hydrolysis of (YOUNG and CROOKES), 1905, P., 308.

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α -Arylaminoanthraquinones, nitro-derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 770.

Aryl-*p*-diaminoanthraquinonesulphonic acids, alkylated, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 968.

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8-Arylamino- α -naphtholsulphonic acids, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 914.

Arylanthranilic acids, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 159; (GOLDBERG and ULLMANN), 1906, A., i, 953; (ULLMANN, BADER, DIETERLE, HOZ, KIPPER, RASETTI, and TEDESCO), 1907, A., i, 842.

Arylarsinic acids, hydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 279.

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4-Arylazo-3-methyl-5-pyrazolones, derivatives of, with an acid radicle attached to the primary nitrogen atom, formation of, from ethyl arylazoacetoacetateacylhydrazones (BÜLOW and SCHAUB), 1908, A., i, 704.

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β -Arylcinnamic acids, stereoisomeric (STOERMER and FRIDERICI), 1908, A., i, 179.

1-Aryl-2:4-dialkyl-3-halogenmethyl-5-pyrazolones (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 257.

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1-Aryl-5-halogenmethyl-2:4-dialkyl-3-pyrazolones, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 523.

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β -Arylhydroxylamines, formation of, by the electro-chemical reduction of aromatic nitro-compounds (BRAND), 1905, A., i, 770.

- 2-Arylimino-5:5-dialkylbarbituric acids**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 987.
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- Arylybenzoic acids** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1905, A., i, 780.
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- Arylsulphonamides**, nitration of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1905, A., i, 639; 1906, A., i, 736.
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- Arylsulphonylbenzidines** and their diazonium salts (MORGAN and MICKLETHWAIT), 1908, T., 614; P., 51.
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- Arylsulphonyl- α -naphthylamines**, condensation of, with *p*-aminophenols (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), 1908, A., i, 209.
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- s-Arylthiocarbamides**, study and synthetic preparation of some (POZZI-ESCOT), 1904, A., i, 869.
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- Arylthiosulphonacetoacetic acids**, ethyl esters, action of phenylhydrazine on (TRÖGER and VOLKMER), 1905, A., i, 89.
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β -l-Asparagine, solubility of (BRESLER), 1904, A., i, 380.

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p-Azoimidobenzoic acid, ethyl ester (DIMROTH and PFISTER), 1910, A., i, 904.

o-Azoimidobenzoquinone, 3:5-dibromo-. See Phenylazoimide, 4-6-dibromo-2-hydroxy-.

3:3'-Azoindazole and its nitrate, hydrate, and diacetyl and dibenzoyl derivatives (BAMBERGER and WILDI), 1907, A., i, 165.

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Azoleacetaldehyde, β -imino-, and its hydrochloride (LANGHELD), 1909, A., i, 557.

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9-Azophenanethene (SCHMIDT and STROBEL), 1903, A., i, 691.

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p-Azophenetole, properties of (DREYER and ROTARSKI), 1905, A., i, 952.

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- pp'*-Azophenyldimethylsulphinium salts (BRAND and WIRSING), 1912, A., i, 666.
- Azophenylindole (CASTELLANA and D'ANGELO), 1905, A., i, 940.
- p*-Azophenyl mercaptan, 4:4'-dinitrodiphenyl ether of (FROMM and WITTMANN), 1908, A., i, 632.
- 4-Azo-1-phenyl-5-methyl-3-pyrazolone and its hydrochloride (MICHAELIS and KOTELMANN), 1907, A., i, 155.
- pp'*-Azophenyl methyl sulphide and its derivatives (BRAND and WIRSING), 1912, A., i, 666.
- 3-Azophthalic acid, methyl ester (BOGERT and JOUARD), 1909, A., i, 306.
- Azopyrazolones, preparation of (BÜLOW and HECKING), 1911, A., i, 403.
- decomposition of, with concentrated nitric acid (BÜLOW, HAAS, and SCHMACHTENBERG), 1910, A., i, 902.
- Azopyrazolone derivative, new (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 264.
- Azopyrroles and their reduction (KHOTINSKY and SOLOWEITSCHIK), 1909, A., i, 616.
- Azosalicylic acids, *o*-nitro-, reduction of, by means of sodium hyposulphite (GRANDMOUGIN) 1907, A., i, 166; (GRANDMOUGIN and GUISAN), 1907, A., i, 1092.
- Azosanonic acids (WEDEKIND), 1903, A., i, 542.
- Azolanidine (ODDO and BUZIO), 1911, A., i, 672.
- Azolanine (ODDO and CAESARIS), 1911, A., i, 671.
- Azo-4-stilbazole (FRIEDLÄNDER), 1905, A., i, 819.
- Azostrychninesulphonic acid (LEUCHS and BOLL), 1910, A., i, 766.
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- o*-Azothioanisole (BRAND), 1909, A., i, 855.
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- and radiobacter, the chemical changes involved in the assimilation of free nitrogen by (STOKLASA, ERNEST, STRAŇÁK, and VÍTEK), 1908, A., ii, 975; (STOKLASA), 1908, A., ii, 880.
- Azotobacter chroococcum* (KRZEMIENIEWSKI), 1909, A., ii, 335.
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- Azo-*p*-tolil (*p*-toluoyl-*p*-tolylazomethylene) (CURTIUS and KASTNER), 1911, A., i, 325.
- o*-Azotoluene, 4:4'- and 5:5'-dinitro- (ULLMANN and FRENTZELL), 1905, A., i, 308.
- 6:6'-dinitro-5-hydroxy-, and its sodium salt and acetyl derivative (BRAND and ZÖLLER), 1907, A., i, 755.
- 2:4:2':4'-tetranitro- (ZINCKE and MAKOMESIUS), 1905, A., i, 487.
- m*-Azotoluene, diamino- (TRÖGER and HILLE), 1904, A., i, 119.
- p*-Azotoluene, crystallisation of (BRUNI), 1904, A., i, 536.
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- p*-Azotoluene, amino-, formation of, from diazoamino-*p*-toluene (JUNG-IUS), 1905, A., i, 555.
- o*-amino-, condensations of (BUSCH and BERGMANN), 1905, A., i, 308.
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- ω -Azotoluene (THIELE), 1910, A., i, 890.
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- 5-Azo-*o*-toluidine (BARBIER and SISLEY), 1907, A., i, 161.
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- o*-**Azoxyacetanilide** and **-aniline** (BRAND and STOHR), 1907, A., i, 100.
- m*-**Azoxyacetophenone** (BAMBERGER and ELGER), 1903, A., i, 561.
- p*-**Azoxy- α -alkylcinnamic acids**, esters, and their liquid crystals (VORLÄNDER and KASTEN), 1908, A., i, 642.
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- p*-**Azoxyanisole** (RISING), 1904, A., i, 237.
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- 2:2'-Azoxyanthraquinone** (SCHOLL and EBERLE), 1912, A., i, 142.
- Azoxybenzaldehyde**, transformation of (ALWAY and BONNER), 1905, A., i, 676.
- o*-**Azoxybenzaldehyde** and its diphenylhydrazone (BAMBERGER and REMERT), 1907, A., i, 164.
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- m*-**Azoxybenzaldehyde** (ALWAY), 1903, A., i, 201.
- and its bisphenylhydrazone, dioxime, and aldazine (HUMAN and WEIL), 1904, A., i, 115.
- p*-**Azoxybenzaldehyde** (ALWAY), 1903, A., i, 201, 706; (HUMAN and WEIL), 1904, A., i, 115.
- o*-**Azoxybenzaldoxime** (BAMBERGER and ELGER), 1904, A., i, 94.
- p*-**Azoxybenzaldoxime-*N*-*p*-formylphenyl ether** (ALWAY), 1903, A., i, 706.
- o*-**Azoxybenzamide** (HELLER and WEIDNER), 1910, A., i, 596.
- Azoxybenzene** (LACHMAN), 1903, A., i, 294.
- Azoxybenzene** and its dibromide (WOHL and AHLERT), 1904, A., i, 201.
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- Azoxybenzene**, β -*p*-bromo-, and α - and β -4-bromo-4'-nitro- (ANGELI and VALORI), 1912, A., i, 321.
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- p*-thiocyano- (FICHTER and BECK), 1912, A., i, 105.
- m*- and *p*-**Azoxybenzene**, tri-imides of (BUCHNER), 1909, A., i, 979.
- iso*-**Azoxybenzene** (REISSERT), 1909, A., i, 436.
- Azoxybenzene-4:4'-bisazoformanilide** (BORSCHKE and KÜHL), 1906, A., i, 320.
- Azoxybenzene-*o*-carboxylic acid**, (FREUNDLER), 1910, A., i, 138.
- o*-**Azoxybenzoic acid**, 3:6:3':6'-tetrachloro- (BAMBERGER and ELGER), 1910, A., i, 269.
- p*-**Azoxybenzoic acid**, esters (VORLÄNDER), 1906, A., i, 318.
- Azoxybenzoic acids**, *m*- and *p*-, methyl esters (ALWAY and WALKER), 1903, A., i, 696.
- o*-, *m*-, and *p*-, esters (MEYER and DAHLEM), 1903, A., i, 448.
- o*-**Azoxybenzyl alcohol** (BAMBERGER), 1903, A., i, 417.
- m*-**Azoxybenzyl alcohol** and its dibenzoyl derivative (CARRÉ), 1905, A., i, 889.
- p*-**Azoxybenzylideneacetophenone** (VORLÄNDER), 1906, A., i, 318.
- m*-**Azoxybenzylideneaniline** (HUMAN and WEIL), 1904, A., i, 115.
- o*-**Azoxycinnamic acid** (HELLER and TISCHNER), 1910, A., i, 597.
- p*-**Azoxycinnamic acid**, esters (VORLÄNDER), 1906, A., i, 318; (LEHMANN), 1906, A., ii, 430, 431.
- Azoxycinnamic acids**, *m*- and *p*-, and their esters and sodium salts (MARIE), 1905, A., i, 554.

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p-Azoxyphenetole (RISING), 1904, A., i, 238.

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p-Azoxyphenetole, absorption of carbon dioxide by, relation between solubility and the physical state of the solvent in the (HOMFRAY), 1910, T., 1669; P., 197.

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o-Azoxytoluene, bromo- (REISSERT), 1909, A., i, 436.

o-iso-Azoxytoluene (REISSERT), 1909, A., i, 436.

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$C_{10}H_{23}O_2N$, secondary, and its hydrochloride, from chlorodimethylethylcarbinol and ammonia (RIEDEL), 1908, A., i, 769.

$C_{11}H_{15}N_3$, and its hydrochloride, from acetylacetone and o -phenylenediamine (THIELE and STEIMMIG), 1907, A., i, 352.

$C_{11}H_{23}N$, from dihydro- β -campholene-trimethylammonium hydroxide (BOUVEAULT and BLANC), 1903, A., i, 613.

Base, $C_{11}H_{10}N_2S$, from the action of benzoyl chloride or sodium hypsulphite in presence of pyridine (BINZ and MARX), 1907, A., i, 923.

$C_{11}H_{11}O_3N$, and its salts, from β -bromopropylphthalamic acid (BARTHOLDY), 1907, A., i, 1044.

$C_{11}H_{12}O_2N_2$, from 2-keto-3-methylimino-5-phenylpyrrolidine hydrochloride (MUMM and MÜNCHMEYER), 1911, A., i, 80.

$C_{11}H_{14}O_2N_2$, and its hydrochloride, from cyclobutanone nitrosite (DEMJANOFF), 1908, A., i, 329.

$C_{12}H_9N_3$, and its salts, from the hydriodic acid of the compound, $C_{18}H_{13}N_3$ (ORTOLEVA), 1907, A., i, 730.

$C_{12}H_{16}N_2$, from *Withania somnifera* and its salts (POWER and SALWAY), 1911, T., 496; P., 53.

$C_{12}H_{23}N$, from α -camphylamine (BOUVEAULT and BLANC), 1903, A., i, 613.

$C_{12}H_9N_3$, from the base, $C_{18}H_{13}N_3$ (ORTOLEVA), 1906, A., i, 715.

$C_{12}H_{11}ON$, and its nitroso-compound, from formaldehyde and formyl- β -naphthylamine (ORLOFF), 1905, A., i, 190.

$C_{13}H_{16}O_2N_2$, from chlorogrylone (GABRIEL), 1911, A., i, 229.

$C_{14}H_{28}N_2$, and its additive salts, from the action of finely-divided metals on piperidine (PADOA), 1907, A., i, 637.

$C_{14}H_{12}N_4S$, from *o*-aminothiobenzamide and iodine, and its salts (REISSERT and GRUBE), 1909, A., i, 924.

$C_{14}H_{15}ON$, from the reduction of the substance, $C_{14}H_{13}O_3N$ (KONOWALOFF and JATZEWITSCH), 1905, A., i, 764.

$C_{14}H_{17}O_2N$, from methyl α -*p*-aminocinnamylideneacetate and methyl iodide (FECHT), 1907, A., i, 927.

$C_{14}H_{19}O_2N$, and its aurichloride and picrate, from phenylmethylethylmorpholone dimethylammonium bromide or hydroxide (FOURNEAU), 1909, A., i, 51.

$C_{14}H_{19}O_2N_2$, from the decomposition of $C_{22}H_{25}ON_5$ (PRAGER), 1903, A., i, 540.

$C_{14}H_{23}ON$, from oil of caraway (SCHIMMEL & Co.), 1905, A., i, 537.

$C_{14}H_{24}ON_2$, and its aurichloride, from suberoneiso-oxime (WALLACH and VAN BEECK-VOLLENHOVEN), 1903, A., i, 105.

$C_{15}H_{13}N_2$, from quinazoline (GABRIEL and COLMAN), 1904, A., i, 1061.

Base, $C_{15}H_{19}N_3$, from the reduction of the azonion base, $C_{16}H_{20}N_4Cl_3$, $2H_2O$ (FISCHER), 1904, A., i, 349.

$C_{15}H_{22}N_2$, and its salts, from heating lupanine (PALMA), 1912, A., i, 805.

$C_{15}H_{27}N$, from the action of ammonia on isovaleraldehyde (TSCHITSCHIBABIN), 1906, A., i, 452.

$C_{15}H_{36}O_{13}N_8$, from urine (ENGELAND), 1908, A., ii, 1056.

$C_{16}H_{14}N_2$, and its hydrochloride, from benzoylacetone and *o*-phenylenediamine (THIELE and STEIMMIG), 1907, A., i, 352.

$C_{16}H_{16}N_2$, and its hydrochloride, from 8-amino-5-hydroxy-3:7:10-trimethyldihydroacridine (FOX and HEWITT), 1904, T., 532; P., 9.

$C_{16}H_{15}ON$, hydriodic acid of, from bis-anhydrophenacylamine (GABRIEL and LIECK), 1908, A., i, 465.

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$C_{16}H_{15}O_2N_4$, from ethyl isosuccinate and *o*-phenylenediamine (MEYER and JAEGER), 1906, A., i, 766.

$C_{16}H_{19}O_3N$, from the substance, $C_{24}H_{25}O_4N$ (ERLENMEYER and BADE), 1905, A., i, 131.

$C_{16}H_{21}N_5S$, and its salts, from the reduction of tetraethylthionine (GNEHM and SCHINDLER), 1908, A., i, 111.

$C_{16}H_{16}ON_2ClS$, from *n*-phenyl-*v*-methylphenylthiourea (DIXON and TAYLOR), 1912, T., 568.

$C_{17}H_{16}N_2$, and its di- and tri-acetyl derivatives, from *o*-nitrobenzyl- β -naphthylamine (DARIER and MANNASSEWITCH), 1903, A., i, 83.

$C_{17}H_{18}N_2$, and its salts and benzoyl derivative, from the reduction of α -dibenzylideneacetonehydroxylamineoxime (MINUNNI and CIUSA), 1905, A., i, 245.

$C_{17}H_{21}ON_2Cl$, and its salts with hydrochloric acid (STAUDINGER), 1909, A., i, 907.

$C_{18}H_{13}N_3$, hydriodic acid of, from the action of iodine on benzaldehyde-phenylhydrazone in pyridine solution (ORTOLEVA), 1906, A., i, 715.

$C_{18}H_{16}ON_2$, and its benzoyl derivative, from the lactone of the acid, $C_{23}H_{25}O_5N_2$ (REISSERT), 1905, A., i, 926.

Base, $C_{18}H_{17}N_2Cl$, from the aldehyde $C_{12}H_{13}ON$, aniline, and hydrochloric acid (ZINCKE and WÜRKER), 1905, A., i, 242.

$C_{18}H_{19}O_2N$, from chlorocodide (VON GERICHTEN and MÜLLER), 1903, A., i, 571.

$C_{18}H_{21}ON$, from acetylcamphor-*m*-hydroxyanil, and its picrate (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.

$C_{18}H_{23}O_2N$, from phenylchlorodimethylcarbinol and ammonia (RIEDEL), 1908, A., i, 769.

$C_{19}H_{17}ON$, from 2-ethylquinoline (VON GERICHTEN and ROTTA), 1911, A., i, 677.

$C_{19}H_{20}ON_3$, and its additive salts, from the oxidation of cinchonine (RABE, ACKERMANN, and SCHNEIDER), 1907, A., i, 955.

$C_{19}H_{20}O_6N_4$, and its hydrochloride, from the action of nitric acid on cinchonine (RABE and ACKERMANN), 1907, A., i, 546.

$C_{19}H_{16}ONCl$, from 2-ethylquinoline (VON GERICHTEN and ROTTA), 1911, A., i, 677.

$C_{20}H_{17}N$, and its salts and dinitro-derivative, obtained in the preparation of α -stilbazole (LADENBURG), 1903, A., i, 275.

$C_{20}H_{40}N_2$, from the reduction of the base, $C_{20}H_{35}NCl$ (WALLACH and JÄGER), 1903, A., i, 105.

$C_{20}H_{41}N_3$, and its salts, from pentamethylenepiperidinium bromide (v. BRAUN, MÜLLER, and BESCHKE), 1907, A., i, 152.

$C_{20}H_{12}O_4N_2$ (two), from the action of 3- and 4-nitro-2-aminophenol on phenanthraquinone (KEHRMANN and WINKELMANN), 1907, A., i, 346.

$C_{20}H_{14}O_4N_3$, and its acetylaminoderivative, from the base, $C_{20}H_{12}O_4N_2$ (KEHRMANN and WINKELMANN), 1907, A., i, 346.

$C_{20}H_{16}ON_3$, and its salts, from chrysophenol (DUNSTAN and HEWITT), 1906, T., 1478; P., 243.

$C_{20}H_{19}O_2N_3$, from the hydrolysis of carbanilido-5-hydroxy-2-methylbenzidine (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.

$C_{20}H_{18}O_2N_3Cl$, from carbanilido-*m*-chlorobenzenehydrazo-*p*-cresol (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.

Base, $C_{21}H_{14}O_4N_2$, from the action of 5-nitro-3-amino-*p*-cresol on phenanthraquinone (KEHRMANN and WINKELMANN), 1907, A., i, 346.

$C_{21}H_{15}O_2N$ (two), from the action of *o*-amino-*m*- and -*p*-cresols on phenanthraquinone (KEHRMANN and WINKELMANN), 1907, A., i, 346.

$C_{22}H_{21}N_3$, and its salts, and $C_{24}H_{23}ON_3$, from benzoflavine (HEWITT and FOX), 1905, T., 1061; P., 216.

$C_{22}H_{18}O_2N_2$, from 3-aminophenanthra-phenazoxonium chloride (KEHRMANN and WINKELMANN), 1907, A., i, 346.

$C_{22}H_{25}O_4N$, from reduction of corycavine, and its aurichloride (GAEBEL), 1910, A., i, 502.

$C_{22}H_{29}ON_5$, from diazobenzene and ethyl diethylaminocarbonate (PRAGER), 1903, A., i, 540.

$C_{23}H_{26}O_6N_2$, and its hydrochloride, from tetramethyl-2:4-diaminobenzaldehyde and phloroglucinol (SACHS and APFENZELLER), 1908, A., i, 187.

$C_{24}H_{22}N_3As$, from arsenious chloride and aniline, and its dibenzoyl derivative (MORGAN and MICKLETHWAIT), 1909, T., 1474.

$C_{25}H_{29}O_6N$, from isobutyldihydroberberine (FREUND), 1912, A., i, 487.

$C_{28}H_{28}N_4(+H_2O)$, from β -*p*-tolylhydroxylamine and sulphuric acid (BAMBERGER and BRUN), 1912, A., i, 692.

$C_{29}H_{37}N_3$, and its salts, from form-isobutaldol and dimethylaniline (SAMEC), 1905, A., i, 489.

$C_{31}H_{32}O_2N_4$, from action of heat on substance, $C_{33}H_{32}O_5N_4$, and its tetraacetate, $C_{39}H_{40}O_6N_4$, and dinitroso-compound (GELMO and SUIDA), 1909, A., i, 382.

$C_{41}H_{34}N_4$, from tetramethyldiaminodiphenyldiaminonaphthylmethane and phenanthraquinone (NOELTING), 1904, A., i, 622.

$C_{51}H_{60}ON_6$, from the leuco-base from tetramethyldiaminobenzhydrol and *p*-toluidine and propionaldehyde diethylacetal (REITZENSTEIN and SCHWERDT), 1907, A., i, 651.

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- detection of fluorine in (WINDISCH), 1903, A., ii, 40; (FLAMAND), 1909, A., ii, 180.
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p-hydroxy-, ethylene and trimethylene ethers of, and their derivatives, synthesis of (GATTERMANN), 1908, A., i, 34.

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2:4-dihydroxy-, methyl ether of, and its oxime, phenylhydrazone, and sodium derivative from the root of a species of Chlorocodon (GOULDING and PELLY), 1903, P., 62.

2:5-dihydroxy-. See Gentisaldehyde.

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2:4:6-trihydroxy-, ethers and homologues of (HERZIG and WENZEL), 1904, A., i, 251.

p-hydroxylamino- (ALWAY), 1903, A., i, 706.

iso-*o*-hydroxylamino- (BAMBERGER and DEMUTH), 1903, A., i, 432.

o-, *m*-, and *p*-iodo-, and their semicarbazones (WILLGERODT and RIEKE), 1905, A., i, 442.

p-iodo- (WILLGERODT and BOGEL), 1905, A., i, 901.

iododichloride and *p*-iodoso- (WILLGERODT and UCKE), 1912, A., i, 774.

4-iodo-2-nitro-, 2:4-di- and 2:4:6-trinitro-, 2:6-dinitro-4-amino-, and 2-nitro-4-hydroxy-, and their phenylhydrazones (SACHS and KANTOROWICZ), 1906, A., i, 908.

o-nitro-, preparation of (REISSERT), 1907, A., i, 1046; (KALLE & Co.), 1909, A., i, 76; (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), 1911, A., i, 987.

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4-halogen compounds of, and their phenylhydrazones (SACHS and KEMPF), 1904, A., i, 62.

p-nitrophenylhydrazone, and *o*-nitroso-, preparation of (BAMBERGER and FODOR), 1911, A., i, 60.

o- and *m*-nitro-, condensation products of 2:4-dimethylquinoline with (SPALLINO and CUCCHIARONI), 1912, A., i, 582.

o-, *m*-, and *p*-nitro-, action of sodium hydroxide on (SELIGMAN), 1903, A., i, 425.

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m-nitro-, action of 5-methylacridine on (FRIEDLÄNDER), 1905, A., i, 829.

m- and *p*-nitro-, reduction of (ALWAY and WELSH), 1903, A., i, 263.

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p-nitro-, action of, on ethyl phenylazoacetate (PRAGER), 1903, A., i, 540.

- Benzaldehyde**, *p*-nitro-, reduction of (ALWAY), 1903, A., i, 425.
- 2:4-*d*-nitro-, condensation of (FRIEDLÄNDER and COHN), 1903, A., i, 264.
- 2:4-bisdimethylaminoanil of (SACHS and APPENGELLER), 1908, A., i, 227.
- new derivatives of (SACHS and BRUNETTI), 1907, A., i, 756.
- 2:6-*d*-nitro-, and its oxime and phenylhydrazone (REICH and PINCZEWSKI), 1912, A., i, 361.
- 2:4:6-*tr*-nitro-, diacetate (SPÄTH), 1910, A., i, 488.
- anils, oximes, and phenylhydrazones of (SACHS and EVERDING), 1903, A., i, 425.
- 6-nitro-3-amino-, and its *N*-acetyl derivative and their phenylhydrazones (FRIEDLÄNDER and FRITSCH), 1903, A., i, 347.
- o*-nitroso- (BAMBERGER, FODOR, and BAUDISCH), 1909, A., i, 589.
- m*- and *p*-nitroso-, relations between physical properties and molecular weights of (ALWAY and BONNER), 1903, A., i, 764.
- p*-nitroso-, preparation of (ALWAY), 1903, A., i, 425, 706.
- molecular weight of (ALWAY and GORTNER), 1904, A., i, 881.
- condensation of, with the three nitroanilines (ALWAY and GORTNER), 1906, A., i, 994.
- o*- and *p*-thiocyano- (FRIEDLÄNDER and LENK), 1912, A., i, 702.
- Benzaldehydes**, condensation of, with *p*-diketocyclohexane (STOLLÉ and MÖRING), 1904, A., i, 875.
- separation and transformation of the (ERLENMEYER, HILGENDORFF, and MARX), 1911, A., i, 784.
- Benzaldehydeacetal**, 2:4-*d*-nitro- (SACHS and SICHEL), 1904, A., i, 594.
- Benzaldehyde-*o*-aminophenylhydrazone** and its hydrochloride (FRANZEN), 1907, A., i, 321.
- Benzaldehyde-ammonia** (FRANCIS), 1909, A., i, 588.
- o*-**Benzaldehyde-*o*-azobenzoic acid** and its oxime and semicarbazone (CARRÉ), 1905, A., i, 307.
- m*-**Benzaldehydeazobenzoic acid** and its ethyl ester, aldazine, and oxime (HUMAN and WEIL), 1904, A., i, 115.
- p*-**Benzaldehydeazobenzoic acid** and its ethyl ester (HUMAN and WEIL), 1904, A., i, 115.
- Benzaldehydeazobenzoic acids**, *m*- and *p*-, and their ethyl esters and the phenylhydrazone of the *m*-acid (ALWAY and BONNER), 1905, A., i, 676.
- 2'-**Benzaldehydeazoxy-2-benzoic acid** and its phenylhydrazone and sodium salt (BAMBERGER and REMMERT), 1907, A., i, 164.
- Benzaldehydebenzylhydrazone**, formation of (BUSCH and FLEISCHMANN), 1910, A., i, 282.
- Benzaldehyde-*di*-*m*-chlorobenzylhydrazone** (CURTIUS and WEWER), 1912, A., i, 310.
- Benzaldehyde-*o*-chloro-*p*-nitrophenylhydrazone**, ω -amino-, and its oxalate and hydrochloride (PONZIO), 1910, A., i, 444.
- Benzaldehydecyanohydrin**. See Mandelonitrile.
- Benzaldehydedialkylsemicarbazones** (BUSCH and FREY), 1903, A., i, 537.
- Benzaldehyde-4-diazonium salts**, 2-nitro- and 2:6-*d*-nitro- (SACHS and KANTOROWICZ), 1906, A., i, 908.
- Benzaldehydediisobutylacetal**, *o*-nitro- (BAMBERGER and ELGER), 1910, A., i, 268.
- Benzaldehydediethylacetal**, *o*-nitro- (BAMBERGER and ELGER), 1910, A., i, 268.
- Benzaldehydesyn-diphenylcarbonyloxime** (DUNN), 1911, P., 239.
- Benzaldehydediphenylethylhydrazone** and its hydrochloride (BUSCH and FLEISCHMANN), 1910, A., i, 282.
- Benzaldehydedipropylacetal**, *o*-nitro- (BAMBERGER and ELGER), 1910, A., i, 268.
- Benzaldehydediisopropylacetal**, *o*-nitro- (BAMBERGER and ELGER), 1910, A., i, 268.
- Benzaldehyde-2:4-disulphonic acid**, 6-chloro-, and -2:6-disulphonic acid (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1908, A., i, 986.
- Benzaldehydeindogenide**, *di*hydroxy-, and *p*-hydroxy-, and their acetyl derivatives (PERKIN and THOMAS), 1909, T., 798; P., 125.
- Benzaldehyde-*p*-methoxyphenylhydrazone** (PADOA and SANTI), 1911, A., i, 1029.
- Benzaldehyde-*p*-methylbenzylhydrazone** and its derivatives (CURTIUS and SPRINGER), 1912, A., i, 139.
- Benzaldehyde-*o*-nitrophenylhydrazone**, ω -amino-, and its hydrochloride and ω -nitro- (PONZIO), 1910, A., i, 443.

- Benzaldehyde-*m*-nitrophenylhydrazone**, ω -cyano-, and ω -nitro- (PONZIO), 1911, A., i, 920.
- Benzaldehyde-*p*-nitrophenylhydrazone** and nitroso- (BAMBERGER and PEMSEL), 1903, A., i, 285.
 ω -amino-, and its oxalate and hydrochloride and ω -nitro-, action of ammonia on (PONZIO), 1910, A., i, 442.
- Benzaldehyde-*op*-dinitrophenylhydrazone**, ω -nitro- (PONZIO), 1911, A., i, 920.
- Benzaldehydenitroso-*m*-chlorobenzylhydrazone**, *m*-chloro- (CURTIUS and WEWER), 1912, A., i, 311.
- Benzaldehydenitroso-*o*-hydroxybenzylhydrazone**, *o*-hydroxy- (CURTIUS and KÜPPERS), 1912, A., i, 505.
- Benzaldehydenitroso-*m*-hydroxybenzylhydrazone**, *m*-hydroxy- (CURTIUS and KÜPPERS), 1912, A., i, 505.
- Benzaldehydenitroso-*p*-nitrophenylhydrazone**, ω -amino- (PONZIO and GASTALDI), 1911, A., i, 926.
- Benzaldehyde-*o*-nitro-*p*-tolylhydrazone**, ω -amino-, and its hydrochloride (PONZIO), 1910, A., i, 444.
- Benzaldehyde-*p*-nitro-*o*-tolylhydrazone**, ω -amino-, and its oxalate and hydrochloride (PONZIO), 1910, A., i, 443.
- Benzaldehydephenylhydrazone**, labile, preparation of (THOLE), 1911, P., 278.
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- Benzaldehydephenylhydrazone**, 3:5-di-bromo-2-hydroxy-, *O*-acetate, *O*-benzoate, and *N*-benzoyl derivative of (AUWERS and HANNEMANN), 1909, A., i, 441.
- Benzaldehydephenylhydrazone**, *p*-hydroxy-, and its mono- and di-acetyl derivatives, decomposition of (ANSELMINO), 1904, A., i, 194.
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- α -Benzaldehydephenylhydrazone**, relation of, to other nitrogen compounds (CIUSA and PENTALOZZA), 1909, A., i, 747; 1911, A., i, 678.
- Benzaldehydephenylhydrazones**, compounds of, with picryl chloride, trinitrotoluene, trinitrophenol, trinitrobenzene, and trinitrotoluene (CIUSA and VECCHIOTTI), 1912, A., i, 33.
- Benzaldehyde-phenyl- and -*o*- and -*p*-tolylhydrazones** and their properties (REUTT and v. PAWLEWSKI), 1904, A., i, 99.
- Benzaldehydephenylhydrazone-*N*-carboxylic chloride** (BUSCH and WALTER), 1903, A., i, 522.
- Benzaldehydephenylhydrazone-*p*-sulphonic acid**, 2:4:6-trinitro- (SACHS and KANTOROWICZ), 1906, A., i, 909.
- Benzaldehydephenyliodinium hydroxide** and salts (WILLGERODT and RIEKE), 1905, A., i, 442.
- Benzaldehydephenylmethylhydrazone**, *m*-nitro- (BAMBERGER and PEMSEL), 1903, A., i, 286.
- Benzaldehyde-2-mono- and -2:4-diphenylsemicarbazones** (BUSCH and WALTER), 1903, A., i, 522.
- Benzaldehyde-semicarbazone**, and -thio-semicarbazone, *N*-alkyl and -aryl substituted (BUSCH, OFFERMANN, and WALTER), 1904, A., i, 629.
- Benzaldehyde-2-sulphonic acid**, 4-nitro-, potassium salt (GREEN and CROSLAND), 1906, T., 1606; P., 257.
- Benzaldehyde-3-sulphonic acid**, 2:6-di-chloro- and -6-sulphonic acid, 2-chloro- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1908, A., i, 936.
- Benzaldehydesulphonic acids** (CHEMISCHE FABRIK VORM. SANDOZ), 1905, A., i, 141.
- Benzaldehyde-2- and -3-sulphonic acids**, 4-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 459.

- Benzaldehydesulphoxylic acid**, sodium salt (BAZLEN), 1905, A., ii, 241; (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 478; (FROMM), 1909, A., i, 108; (FROMM and ERFURT), 1909, A., i, 936.
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- Benzaldehydetetramethyl-di-*p*-aminobenzhydrylhydrazone** (CURTIUS and KOF), 1912, A., i, 732.
- Benzaldehyde-*m*-tolylhydrazone** (PADOA and GRAZIANI), 1910, A., i, 135.
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- Benzaldehyde-*p*-tolylmercaptal** (FROMM and RAIZISS), 1910, A., i, 555.
- Benzaldehyde-1:2:4-, and 1:3:4-, and 1:4:5-xylylhydrazones** (PADOA and GRAZIANI), 1910, A., i, 509, 778.
- Benzaldoxime and *o*-chloro-**, reduction of (FRANZEN), 1905, A., i, 427.
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- Benzaldoxime**, 4-bromo-2-nitro-, 4-chloro-2-nitro-, and 4-nitro-2-amino- (SACHS and SICHEL), 1904, A., i, 593.
o-hydroxylamino-, behaviour of, towards hydroxylamine and air (BAMBERGER), 1903, A., i, 84.
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- Benzantialdoxime**, silver and mercury compounds of (FRANCESCONI and PIAZZI), 1903, A., i, 835.
- Benzsynaldoxime**, *p*-iodo-, velocity of rearrangement of, in *n*-propyl tartrate (PATTERSON and McMILLAN), 1908, T., 1047; P., 135.
- Benzaldoximes**, α - and β - and their bromal and chloral additive compounds (BECK and HASE), 1907, A., i, 826.
- Benzamarone**, *o*-, *m*-, and *p*-nitro- (STOBEE and WILSON), 1910, A., i, 624.
- Benzamide**, absorption spectra of (HARTLEY and HEDLEY), 1907, T., 319; P., 31.
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- Benzamide**, *m*-amino-, acetyl derivative (BOGERT and BEANS), 1904, A., i, 584.
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4-bromo-2:6-*d*-nitro-3-hydroxy- (BORSCHE and GAHRTZ), 1906, A., i, 957.
2:4:6-*tri*bromo-, crystallography of (JAEGER), 1908, A., i, 988.
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2:4:6-*tri*chloro-3-nitro- and 2:4:6-*tri*-nitro-, and the action of anhydrous nitric acid on (MONTAGNE), 1903, A., i, 169.
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2-iodo-4-nitro- (WILLGERODT and GARTNER), 1908, A., i, 877.
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- Benzamide**, thio-, action of thionyl chloride on, and its benzoyl derivative (TOCHTERMANN), 1905, A. i, 595.
- Benzamide-*o*-azobenzoic acid**. See *o*-Carbamylbenzeneazobenzoic acid.
- Benzamidesulphonic acid** and its salts (BÜHNER), 1904, A., i, 882.
- Benzamidine**, action of, on ethyl benzylideneacetoacetate, and on ethyl benzylidenemalonate (RUHEMANN), 1903, T., 374; P., 50.
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- Benzamidine**, *o*-nitro-, and its platinum-chloride (MATSUI), 1910, A., i, 696.
- Benzanilide**, compound of, with iodine and potassium iodide (CLOVER), 1904, A., i, 322.
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- Benzanilide**, *o*-amino-, benzoyl derivative (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 58.
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p-cyano- (FISCHER and WOLTER), 1909, A., i, 639.
p-iodo-, and 3:5-dinitro- (JOHNSON and MEADE), 1906, A., i, 852.
3:5-di-iodo-2-amino- (WHEELER and JOHNS), 1910, A., i, 382.
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- Benzanisanilide** (WHEELER and JOHNSON), 1903, A., i, 693.
- Benz-*p*-anisidide**, nitro-derivatives REVERDIN and DE LUC, 1909, A., i, 377; (REVERDIN), 1911, A., i, 776.
- Benzanisoin** (EKECRANTZ and AHLQVIST), 1908, A., i, 993.
- 1:2-Benzanthraquinone**, 4-amino-, and 1- and 4-nitro- (SCHOLL and v. WOŁODKOWITSCH), 1911, A., i, 889.
- Benzanthrene** and its picrate and 10-dibromo- (BALLY and SCHOLL), 1911, A., i, 676.
- Benzanthrone** (BALLY), 1905, A., i, 237.
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- Benzanthrone**, bromo- and chloro-, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1908, A., i, 661.
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- Benzanthronequinoline** (BALLY), 1905, A., i, 237; (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 889.
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- Benzanthronequinolines** (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 325.
- Benzanthranyl-1-aminoanthraquinone** derivatives, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 941.
- Benzarsenoquinine** (FOURNEAU and OCHSLIN), 1912, A., i, 929.
- Benzarsinic acid**, ethyl ester (*p*-carboethoxyphenylarsinic acid), and guaiacyl ester (FOURNEAU and OCHSLIN), 1912, A., i, 929.
- Benzbisulphidiazole** (*p*-phenylenebisdisulphide) (GREEN and PERKIN), 1903, T., 1205; P., 206.
- Benz-*tert*-.butylamide** (SCHROETER), 1911, A., i, 506.
- meso-Benzdianthrone**, and *tetrabromo*- (SCHOLL, MANSFIELD, and POTTSCHWAUSCHEG), 1910, A., i, 494.
- meso-Benzdianthrone**, 4:4'-dihydroxy-, and its dibenzoate (SCHOLL and SEER), 1911, A., i, 454.

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- behaviour of, in the organism** (MEYER), 1906, A., ii, 244.
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- detection and estimation of, in nitrotoluene** (RAIKOW and ÜRKEWITSCH), 1906, A., ii, 310.
- isomeric dinitro-, comparative study of the** (DE BRUYN and VAN GEUNS), 1904, A., i, 387; (DE BRUYN), A., 1904, i, 388.
- action of potassium cyanide on** (DE BRUYN and VAN GEUNS), 1904, A., i, 387.
- o*- and *p*-dinitro-, reduction of** (MEISENHEIMER), 1904, A., i, 150; (MEISENHEIMER and PATZIG), 1906, A., i, 642.
- m*-dinitro-, electrolytic reduction of** (BRAND), 1906, A., i, 80.
- additive compounds of** (VAN ROMBURGH), 1911, A., i, 622.
- compounds of, with aluminium chloride** (WALKER and SPENCER), 1904, T., 1108; P., 135.
- 1:3:5-trinitro-, preparation of** (MEYER), 1911, A., i, 848.
- coloured substances from** (JACKSON and EARLE), 1903, A., i, 339.
- additive compounds of** (VAN ROMBURGH), 1904, A., i, 487.
- additive compounds of, with arylamines** (SUDBOROUGH and BEARD), 1911, T., 773; P., 71.
- additive compounds of, with substituted anilines and naphthylamines** (HIBBERT and SUDBOROUGH), 1903, T., 1334; P., 225.
- Benzene, 1:3:5-trinitro-, additive compounds of, with aromatic substances containing the side-chain $\cdot\text{CH:N}\cdot$** (CIUSA), 1906, A., i, 962.
- compounds of, with benzaldehyde-, anisaldehyde-, piperonaldehyde-, and cinnamaldehyde-phenylhydrazones** (CIUSA and VECCHIOTTI), 1912, A., i, 33.
- additive compounds with hydrazine, phenylhydrazine and azobenzene** (HOFMANN and KIRMREUTHER), 1910, A., i, 548.
- additive products of, with 2-methylindole and 2:3-dimethylindole** (CIUSA and VECCHIOTTI), 1912, A., i, 755.
- influence of substituents in, on the formation of additive compounds with arylamines** (SUDBOROUGH and PICTON), 1906, T., 583; P., 84.
- additive compounds of derivatives of, with certain aromatic nitrogen compounds** (CIUSA and AGOSTINELLI), 1906, A., i, 891; 1907, A., i, 553.
- additive compounds of phenols and phenolicethers with** (SUDBOROUGH and BEARD), 1911, T., 212; P., 5.
- 4:6-dinitro-1:3-diamino-2-cyano-** (BLANKSMA), 1908, A., i, 271.
- nitronitroso-, the three isomeric** (BAMBERGER and HÜBNER), 1904, A., i, 115.
- o*-nitronitroso-** (MEISENHEIMER), 1904, A., i, 150.
- m*-nitronitroso-** (ALWAY), A., i, 690.
- and *m*-dinitroso-** (ALWAY and GORTNER), 1905, A., i, 516.
- o*- and *p*-nitrothiocyano-, and their reactions** (MÜLLER), 1907, A., i, 89.
- nitroso-, new method of preparing** (ODDO), 1909, A., i, 637.
- electrolytic production of** (DIEFFENBACH), 1908, A., i, 409.
- action of, on secondary amines** (FREUNDLER and JUILLARD), 1909, A., i, 145.
- condensation of, with chloranthranilic esters** (FREUNDLER), 1910, A., i, 445.
- interaction of, with hydroxylamine** (HANTZSCH), 1905, A., i, 617.
- compound of, with cadmium iodide** (PICKARD and KENYON), 1907, T., 901.
- p*-nitroso-derivatives, action of sulphuric acid on** (BAMBERGER and HAM), 1911, A., i, 684.

- Benzenes**, ethylated, formation of (KLAGES and KEIL), 1903, A., i, 553.
- dinitro*dihydroxy-, preparation of salts of the (SHAW), 1911, P., 14.
- Benzene nucleus**, substitution in the (HOLLEMAN), 1912, A., i, 20; (OBERMILLER), 1912, A., i, 174; (BÖESEKEN), 1912, A., i, 430.
- See also Benzene ring.
- Benzeneazoacetamidocyananilide**. See Chrysoidine, cyano-, acetyl derivative of.
- Benzeneazoacethydrazide**, and *p*-nitro- (DIMROTH and DE MONTMOLLIN), 1910, A., i, 899.
- N*-**Benzeneazoacetophenylhydrazidine** (DIMROTH and MERZBACHER), 1910, A., i, 897.
- 4-Benzeneazo-3-acetylamino-1-amino-2-phenylnaphthalene** and *p*-nitro- and their hydrochlorides (LEES and THORPE), 1907, T., 1295.
- 4-Benzeneazo-1-acetylamino-3-amino-2-phenylnaphthalene** and its hydrochloride (LEES and THORPE), 1907, T., 1290.
- Benzeneazo-*p*-acetylamino benzoylpyruvic acid**, ethyl ester (BÜLOW and NOTTBOHM), 1903, A., i, 863.
- 4-Benzeneazo-8-acetylamino-1-naphthol** (FICHTER and GAGEUR), 1906, A., i, 840.
- Benzeneazoacetyl dibenzoylmethane** and *p*-bromo-, and their transformation into the hydrazones (DIMROTH and HARTMANN), 1907, A., i, 1090.
- p*-nitro- (DIMROTH), 1907, A., i, 663.
- Benzeneazo-4-amino-1:2-methylenedioxybenzene** (MAMELI), 1911, A., i, 510.
- Benzeneazoaniline**. See Azobenzene, *p*-amino-.
- Benzeneazoanilinophenyliminomethane** and its *p*-mono- and *di*-chloro-derivatives (BUSCH and BRANDT), 1906, A., i, 466.
- Benzeneazo-anis- and -benz-aldoximes** and their benzoyl derivatives (BAMBERGER and PEMSEL), 1903, A., i, 283.
- Benzeneazo-*o*-anisidine** and *-m*-anisole (JACOBSON and HÖNIGSBERGER), 1904, A., i, 205.
- Benzeneazo-*m*-anisole** (*m*-methoxybenzeneazobenzene), acid reduction of (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 202.
- Benzeneazo-*m*-anisole**, 4-cyano- (FINGER and WILNER), 1909, A., i, 537.
- Benzeneazo-*p*-anisole**, 1904, 3:5-*di*bromo- (JACKSON and FISKE), 1903, A., i, 689.
- p'*-nitro- (SCHMIDT), 1905, A., i, 951.
- 5-Benzeneazo-anisole** and *-phenetole*, 2-amino-. See Benzeneazo-*o*-anisidine and Benzeneazo-*o*-phenetidine.
- Benzeneazo-*o*-, -*m*-, and -*p*-anisoylacetic acid** methyl esters (WAHL and SILBERZWEIG), 1910, A., i, 263.
- 10-Benzeneazoanthracene** and 9-amino-, 9-amino-*p*-nitro-, and *p*-nitro- (KAUFLEDER and SUCHANNEK), 1907, A., i, 225.
- Benzeneazo-1-anthramine** and its hydrochloride (PISOVSCHI), 1908, A., i, 481.
- 4-Benzeneazoantipyrine** (MICHAELIS and SCHLECHT), 1906, A., i, 614.
- p*-**Benzeneazobenzaldehyde** and its oxime (FREUNDLER and DE LABORDERIE), 1903, A., i, 202.
- m*-nitro- (ALWAY and PINCKNEY), 1904, A., i, 953.
- m*- and *p*-nitro-, and their oximes, anils, and *m*- and *p*-nitroanils (ALWAY and GORTNER), 1906, A., i, 995.
- Benzeneazobenzaldoxime** (BAMBERGER), 1903, A., i, 285.
- p*-nitro-derivatives of (BAMBERGER and PEMSEL), 1903, A., i, 286.
- Benzeneazobenzeneazodimethylaniline** and its hydrochloride (HEWITT and THOLE), 1909, T., 1394; P., 208.
- Benzeneazobenzene-*p*-azo- α -hydroxy-naphthoic acid** (SIRCAR and WATSON), 1912, A., i, 1037.
- Benzeneazobenzeneazophenol**, dihydrochloride and acetyl derivative of (HEWITT and THOLE), 1909, T., 1396; P., 208.
- Benzeneazo-2- and -4-benzeneazophenols**, 4- and 2-, *p*-nitro- and their acetyl derivatives (GRANDMOUGIN and FREIMANN), 1908, A., i, 1023.
- Benzeneazobenzene-*p*-azosalicylic acid** (SIRCAR and WATSON), 1912, A., i, 1037.
- Benzeneazobenzenediazonium chloride**, dichromate and platinichloride (HEWITT and THOLE), 1910, T., 514; P., 54.
- 4-Benzeneazo-2-benzenesulphonyl-1:2-naphthylenediamine** (MORGAN and MICKLETHWAIT), 1912, T., 149.
- Benzeneazo-benzil- and -benzophenone-*p*-hydrazones** and their hydrochlorides (TRÖGER and MÜLLER), 1908, A., i, 1025.
- Benzeneazo-*m*-benzoic acid**, and its methyl ester and silver salt (JACOBSON and STEINBRENNCK), 1909, A., i, 683.

- Benzeneazobenzolic acids**, and hydrogen chloride in methyl alcohol, reactions of (JACOBSON and STEINBRECK), 1909, A., i, 693.
- Benzeneazobenzoylacetetic acid** and *p*-nitro-, and their methyl esters (WAHL and YOSHISAKA), 1908, A., i, 647.
- p*-amino-, *N*-acetyl derivative, ethyl ester, and amide (BÜLOW and BUSSE), 1907, A., i, 165.
- p*-Benzeneazobenzoylacetone, *p*-amino-, *N*-acetyl derivative of, and its phenylhydrazone (BÜLOW and BUSSE), 1906, A., i, 717.
- Benzeneazobenzoylacetoneitrile** (BÜLOW), 1904, A., i, 623.
- O*-Benzeneazobenzoylmalonic acid, ethyl ester (DIMROTH and HARTMANN), 1909, A., i, 67.
- Benzeneazobenzoylpyruvic acid** and its ethyl ester (BÜLOW), 1904, A., i, 623.
- Benzene-*o*-azobenzyl alcohol** and its transformations into phenylindazole and azodiphenylmethane (FREUNDLER), 1903, A., i, 585.
- 5-Benzeneazo-2-benzylglyoxalidone**, *p*-nitro- (FINGER and ZEH), 1910, A., i, 591.
- Benzeneazobenzylidene-*p*-hydrazine** and its derivatives (TRÜGER and MÜLLER), 1908, A., i, 1025.
- Benzeneazobenzylidenenitronic acid**, methyl ester (BAMBERGER), 1903, A., i, 285.
- Benzeneazo-2:6-dibromoaniline**. See Azobenzene; 3:5-dibromo-4-amino-.
- 3-Benzeneazo-4-*p*-bromobenzeneazo-phenol** and its benzoyl derivative (JACOBSON and HÖNIGSBERGER), 1904, A., i, 206.
- 2-Benzeneazo-5-bromobenzoic acid** (FREUNDLER), 1911, A., i, 758.
- Benzeneazo-*m*-bromo-*p*-cresol**, action of mercuric acetate on (SMITH and MITCHELL), 1908, T., 851.
- 2-Benzeneazo-4-bromo- α -naphthylamine**, *o*-, *m*-, and *p*-nitro- (MORGAN, MICKLETHWAIT, and WINFIELD), 1904, T., 751.
- Benzeneazo-4-bromo- and -4-ethoxy- α -naphthylamines** (BUSCH and BERGMANN), 1905, A., i, 310.
- 4-Benzeneazo-2-bromo-6-nitrophenol**, preparation of, and its sodium and potassium salts, and acetyl and benzoyl derivatives (HEWITT and WALKER), 1906, T., 183; P., 16.
- 2-Benzeneazo-6-bromo- and -6-chloro-4-nitro-*m*-phenylenediamines**, *p*-bromo- and *p*-chloro- (MORGAN and WOOTTON), 1905, T., 943.
- 2-Benzeneazo-4:6-dibromo- and -diiodo-*m*-phenylenediamines**, *o*-, *m*-, and *p*-nitro- (MORGAN and WOOTTON), 1905, T., 937; P., 179.
- 4-Benzeneazo-1-*p*-bromophenyl-5-methyl-3-pyrazolone** (MICHAELIS and STIEGLER), 1908, A., i, 210.
- 5-Benzeneazo-1-*m*-bromophenyl-6-pyridazone-3-carboxylic acid**, *m*-bromo-, ethyl ester (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 902.
- Benzeneazocarbonylcoumaranone** and its silver derivative and phenylhydrazone (MERRIMAN), 1911, T., 914; P., 102.
- o*-Benzeneazochlorobenzoic acid** (FREUNDLER), 1906, A., i, 544.
- 2-Benzeneazo-5-chlorobenzoic acid** and its barium salt and methyl ester (FREUNDLER), 1911, A., i, 757.
- Benzeneazo-3:5-dichlorobenzoic acid** and its salts and derivatives (FREUNDLER), 1911, A., i, 577, 815.
- Benzeneazo-*o*-chlorophenol** and its sulphate and benzoate (McPHERSON and DUBOIS), 1908, A., i, 462.
- 4-Benzeneazo-5-chloro-1-phenyl-3-methylpyrazole** alkyl haloids (MICHAELIS and SCHLECHT), 1906, A., i, 614.
- 4-Benzeneazo-5-chloro-3-phenyl-1-methylpyrazole** (MICHAELIS and DORN), 1907, A., i, 247.
- 4-Benzeneazo-5-chloro-3-phenylpyrazole** (MICHAELIS and RASSMANN), 1907, A., i, 246.
- 5-Benzeneazo-1-*p*-chlorophenyl-6-pyridazone-3-carboxylic acid**, *p*-chloro-, ethyl ester (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 902.
- Benzeneazocinnamic acid** and its amide and esters (FREUNDLER and DE LABORERIE), 1903, A., i, 203.
- Benzeneazocoumaric acid** and its acetate and sulphonic acid (BORSCHÉ and STREITBERGER), 1904, A., i, 1064.
- Benzeneazocoumarin**, constitution of (BORSCHÉ), 1904, A., i, 246.
- and its *o*-, *m*-, and *p*-nitro-derivatives, preparation of (MITCHELL), 1905, T., 1229; P., 220.
- Benzeneazocresol** and its acetate, and *O*-acetylhydrazo-derivative (AUWERS, HIRT, and v. DER HEYDEN), 1909, A., i, 438.
- 5-Benzeneazo-*o*-cresol**, *o*-nitro- (BORSCHÉ), 1908, A., i, 66.
- 2:4'-dinitro-** (BORSCHÉ), 1908, A., i, 67.
- 4-Benzeneazo-*m*-cresol** (McPHERSON and BOORD), 1911, A., i, 818.

- Benzeneazo-*p*-cresol**, acyl derivatives of, and their transformation products (AUWERS and ECKARDT), 1908, A., i, 480.
- and *m*'-bromo-, action of mercuric acetate on (SMITH and MITCHELL), 1908, T., 851.
- and *p*-chloro-, action of diazomethane on (SMITH and MITCHELL), 1908, T., 846.
- mercuri-acetate and -chloride (SMITH and MITCHELL), 1908, T., 851; P., 71.
- Benzeneazo-*p*-cresyl methyl ether**, *p*-chloro- (SMITH and MITCHELL), 1908, T., 846.
- Benzeneazocuminyldiene-*p*-hydrazone** and its hydrochloride (TRÖGER and MÜLLER), 1908, A., i, 1025.
- Benzeneazocyanamide**. See α -Phenyltriazene, β -cyano-.
- Benzeneazo-*p*-cyanoanilide** (PIERRON), 1906, A., i, 772.
- benzoyl derivative, melting point of (PIERRON), 1908, A., i, 925.
- Benzeneazo-*p*-cyano-*o*-ethoxyanilide** (PIERRON), 1906, A., i, 772.
- melting point of (PIERRON), 1908, A., i, 925.
- Benzeneazocycano-*m*-ethoxyanilide** (PIERRON), 1908, A., i, 925.
- Benzeneazo-3-cyano- β -naphthol-6-sulphonic acid**, *p*-nitro-, sodium salt (LANGE), 1908, A., i, 300.
- Benzeneazo- α -cyanonaphthylamide** (PIERRON), 1906, A., i, 772.
- Benzeneazo-*p*-cyano-*o*- and -*m*-toluidides** (PIERRON), 1908, A., i, 772.
- O*-Benzeneazodiacetylbenzoylmethane** (AUWERS, DANNEHL, and BOENNECKE), 1911, A., i, 172.
- Benzeneazodiacetylcyclohexantrione** (HELLER and KRETZSCHMAR), 1912, A., i, 274.
- Benzeneazodiacetylhydrazine**, *p*-nitro- (DIMROTH and DE MONTMOLLIN), 1910, A., i, 899.
- Benzeneazodiacetylsuccinic acid**, *p*-nitro-, ethyl ester (DIMROTH), 1907, A., i, 663.
- Benzeneazodibenzoylhydrazine** (DIMROTH and DE MONTMOLLIN), 1910, A., i, 899.
- Benzeneazodibenzoylmethane**, *p*-bromo- (DIMROTH and HARTMANN), 1907, A., i, 1090.
- p*-nitro-, and its isomeride (DIMROTH), 1907, A., i, 663.
- Benzeneazo-3:4-dicarboxy-*N*-dimethylpyrrol-*p*-benzoylpyruvic acid**, ethyl ester (BÜLOW and NOTTBOHM), 1903, A., i, 275.
- Benzeneazodiethylaniline**. See Diethylaminoazobenzene.
- Benzeneazodimethoxybenzoylacetophenone** (BÜLOW and RIESS), 1903, A., i, 101.
- 5-Benzeneazodimethyl-4:6-diamino-*m*-xylene**, *p*-nitro- (MORGAN and CLAYTON), 1906, T., 1057; P., 174.
- Benzeneazodimethylaniline**. See Dimethylaminoazobenzene.
- Benzeneazo-4:6-dimethylcoumarin** and *o*-, *m*-, and *p*-nitro- (HEWITT and MITCHELL), 1905, P., 298; 1906, T., 15.
- Benzeneazo-2:4-dimethyl-3-ethylpyrrole hydrochloride** (GRABOWSKI and MARCHLEWSKI), 1912, A., i, 297.
- 4-Benzeneazo-1:3-dimethyl- Δ^{12} -cyclohexadien-6-one**, phenylhydrazone of (BAMBERGER and REBER), 1907, A., i, 645.
- 4-Benzeneazo-2:6-dimethylnicotinic acid**, ethyl ester (MICHAELIS and KRIEMMEYER), 1909, A., i, 530.
- Benzeneazo-2:4-dimethylpyrrole** and its phenylcarbamide (PLANCHER and SONCINI), 1903, A., i, 449.
- Benzeneazo- $\beta\beta$ -dinaphthylamine** and *p*-chloro- (FISCHER and STRAUS), 1908, A., i, 222.
- Benzeneazodiphenylamine-*o*-carboxylic acid**. See Benzeneazophenylanthrannilic acid.
- 5-Benzeneazo-1:3-diphenyl-5-benzyl- and -5-diphenylmethyl-barbituric acids** and *p*-nitro- (WHITELEY), 1907, T., 1345; P., 180.
- 5-Benzeneazo-1:3-diphenyl-5-benzyl-2-thiobarbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 122.
- 4-Benzeneazo-1:5-diphenyl-3-methylpyrazole**, *p*-amino-, *N*-acetyl derivative of (BÜLOW and BUSSE), 1906, A., i, 717.
- Benzeneazodiphenylphenol**, *p*-nitro- (FICHTER and WALTER), 1910, A., i, 29.
- 4-Benzeneazo-1:3-diphenylpyrazole** and its 5-chloro- and 1-*m*-nitro-derivatives (MICHAELIS and WILLERT), 1908, A., i, 215.
- 4-Benzeneazo-1:3-diphenyl-5-pyrazolone**, *p*-amino- and its *N*-acetyl derivative (BÜLOW and BUSSE), 1907, A., i, 166.
- 4-Benzeneazo-1:3-diphenyl-5-pyrazolone-2'-carboxylic acid** (MICHAELIS and LEO), 1910, A., i, 516.
- Benzeneazodiphenyl-*m*-toluidine** (HAUSSERMAN), 1906, A., i, 911.
- Benzeneazoeugenol** (BORSCHKE and STREITBERGER), 1904, A., i, 1065.

- Benzeneazoeugenol** and *m*-bromo-, and their acetyl derivatives (ODDO and PUXEDDU), 1905, A., i, 492.
- bromo-, chloro-, and nitro-derivatives and their acetyl compounds and ethyl ethers (ODDO and PUXEDDU), 1906, A., i, 992.
- p*-bromo-, methyl ether of (COLOMBANO), 1907, A., i, 1091.
- Benzeneazoisoeugenol** (BORSCHÉ and STREITBERGER), 1904, A., i, 1065.
- and *o*- and *p*-nitro- (PUXEDDU), 1906, A., i, 774.
- Benzeneazoeugenyl ethyl ether**, *p*-bromo- (AUWERS), 1908, A., i, 229.
- Benzeneazoformanilide**, *p*-hydroxy-, and its 3:5-dibromo-, ethyl and benzoyl derivatives (BORSCHÉ and ZELLER), 1904, A., i, 1056.
- Benzeneazoformazyl** (BAMBERGER and PEMSEL), 1903, A., i, 283.
- Benzeneazoformo- β -naphthylamide**, *p*-hydroxy- (BORSCHÉ), 1905, A., i, 306.
- Benzeneazoformotoluidides**, hydroxy- (BORSCHÉ), 1905, A., i, 306.
- Benzeneazofurfurylidene-*p*-hydrazine** and its hydrochloride (TRÖGER and MÜLLER), 1908, A., i, 1025.
- 4-Benzeneazo-3-furyl-5-pyrazolone** (TORREY and ZANETTI), 1910, A., i, 893.
- Benzeneazoglutaconic acid**, ethyl ester (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 901.
- m*-bromo-, ethyl ester, *m*-bromophenylhydrazone (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 902.
- p*-chloro-, ethyl ester, *p*-chlorophenylhydrazone (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 902.
- Benzeneazoguaiacol** and *o*-nitro-, methyl ether of (COLOMBANO), 1907, A., i, 1091.
- and its ethyl ether, and acetyl and *o*-, *m*-, and *p*-nitro-derivatives (COLOMBANO and LEONARDI), 1908, A., i, 68.
- Benzeneazohomophthalic anhydride**. See Phthalonic anhydride phenylhydrazone.
- Benzeneazohydrazinedicarboxylic acid**, tribromo-, ethyl ester (DIMROTH and DE MONTMOLLIN), 1910, A., i, 899.
- Benzeneazo-*m*-hydroxybenzoic acid** and its methyl ester (GRANDMOUGIN and FREIMANN), 1908, A., i, 1024.
- Benzeneazo-*m*-hydroxybenzoic acid** and *m*- and *p*-chloro-, and their reduction (PUXEDDU), 1907, A., i, 995.
- p*-chloro-, methyl ester (COLOMBANO), 1907, A., i, 1091.
- Benzeneazo-*p*-hydroxybenzoic acid**, and ethyl ester, and their acetyl derivatives (GRANDMOUGIN and FREIMANN), 1908, A., i, 1024.
- Benzeneazo-*m*-hydroxycinnamic acid** (BORSCHÉ and STREITBERGER), 1904, A., i, 1064.
- Benzeneazo-5-hydroxy-1-methylbenzoxazole** (HENRICH and WAGNER), 1903, A., i, 89.
- 4-Benzeneazo-5-hydroxy-3-methylisoxazole**, and its silver salt, and 4-*p*-nitro-, and 4-*d*-nitro- (BÜLOW and HECKING), 1911, A., i, 244.
- 4-Benzeneazo-5-hydroxy-3-methylpyrazole**, *p*-nitro-, and *op*-dinitro- (BÜLOW and HECKING), 1911, A., i, 404.
- Benzeneazo-1:3:6-trihydroxynaphthalene** (MEYER and HARTMANN), 1906, A., i, 20.
- Benzeneazo-1-hydroxy-2-naphthoic acid**, action of diazo-compounds on, and its reduction (GRANDMOUGIN), 1906, A., i, 997.
- 4-Benzeneazo-5-hydroxy-1-*op*-dinitrophenyl-3-methylpyrazole** (BÜLOW and HECKING), 1911, A., i, 404.
- 4-Benzeneazo-5-hydroxy-1-phenyl-3-methylpyrazole**, benzoyl derivative of (AUWERS, DANNEHL, and BOENNECKE), 1911, A., i, 170.
- p*-nitro-, and *op*-dinitro- (BÜLOW and HECKING), 1911, A., i, 404.
- Benzeneazo-*m*- and *p*-hydroxy- β -phenylpropionic acids** and their sulphonic acid derivatives (BORSCHÉ and STREITBERGER), 1904, A., i, 1064.
- Benzeneazo-3-hydroxypyridine** (MILLS and WIDDOWS), 1908, T., 1378; P., 174.
- 5-Benzeneazo-8-hydroxyquinoline**, and *p*-acetylamino-, *p*-amino-, *p*-bromo-, and *p*-nitro-, and their derivatives (FOX), 1910, T., 1389; P., 177.
- 1-Benzeneazo-2-hydroxythionaphthen**, and *p*-nitro- (FRIEDLÄNDER), 1909, A., i, 504.
- Benzeneazo-2- and -3-hydroxy-3- and -4-toluic acids**, 5- and 6- (PUXEDDU and MACCIONI), 1907, A., i, 798.
- Benzeneazoiminobenzene** and its oxide and their *p*-bromo- and *p*-chloro-derivatives (BAMBERGER and HÜBNER), 1904, A., i, 1171.
- Benzeneazoiminobenzene oxide**, *p*-hydroxy-, and its acetyl derivative (GRANDMOUGIN), 1907, A., i, 166.

- Benzeneazoisminotoluene** and its oxide (BAMBERGER and HÜBNER), 1904, A., i, 117.
- Benzeneazomelilotic acid** and its sulphonic acid (BORSCHÉ and STREITBERGER), 1904, A., i, 1064.
- Benzeneazomesityloxidoxalic acid**, *p*-nitro-, ethyl ester (DIMROTH), 1907, A., i, 663.
- 5-Benzeneazo-2-methoxybenzoic acid**, methyl ester (COLOMBANO), 1907, A., i, 1091.
- Benzeneazo-3-methoxybenzoic acid**, *p*-chloro-, methyl ester (COLOMBANO), 1907, A., i, 1091.
- 1-Benzeneazo-2-methoxythionaphthen** (AUWERS and MÜLLER), 1911, A., i, 587.
- ω -Benzeneazo-*p*-methoxytoluene**, ω -di-nitro- (PONZIO and CHARRIER), 1908, A., i, 583.
- 5-Benzeneazo-4-methylamino-3:3'-dimethyldiphenyl-4'-azo-*p*-dimethylaniline** (RASSOW and BECKER), 1911, A., i, 932.
- 5-Benzeneazo-4-methylamino-3:3'-dimethyldiphenyl-4'-azo- β -naphthol-3:6-disulphonic acid**, sodium salt (RASSOW and BECKER), 1911, A., i, 933.
- Benzeneazomethyldiphenyl** (BANDROWSKI and PROKOPECZKO), 1904, A., i, 635.
- Benzeneazomethylenefluorene**, *p*-bromo-, and its dibromide (WISLICENUS and RUSS), 1910, A., i, 840.
- Benzeneazo-4-methyl- α -naphthacoumarin** and *o*-, *m*-, and *p*-nitro- (HEWITT and MITCHELL), 1905, P., 302; 1906, T., 17.
- 2-Benzeneazo-1-methylnaphthalene** (BARGELLINI and SILVESTRI), 1907, A., i, 915.
- Benzeneazo-2-methylperimidine**, *m*- and *p*-nitro- (SACHS), 1909, A., i, 427.
- 4-Benzeneazo-3-methylpyrazole-1-*p*-benzoic acid**, 5-chloro- (MICHAELIS, LEONHARDT, and WAHLE), 1905, A., i, 394.
- Benzeneazomorphine** (WIELAND and KAPPELMEIER), 1911, A., i, 745.
- Benzeneazo- α -naphthol**, formation of (ANGELI), 1904, A., i, 699.
- and tetramethyldiaminobenzhydrol, constitution of the acetylated condensation products from (AUWERS and EISENLOHR), 1908, A., i, 229; (MÖHLAU), 1908, A., i, 374.
- 2:4:6-*tribromo*- (ORTON and EVERATT), 1908, T., 1020.
- Benzeneazo- α -naphthol**, 2-nitro-, and its acetyl derivative, and mercuriacetate, and 2':4':6'-*tribromo*-2-nitro- (MITCHELL and SMITH), 1909, T., 1432; P., 209.
- 5-nitro-8-acetylamino- (FICHTER and KÜHNEL), 1910, A., i, 108.
- 2-Benzeneazo- α -naphthol**, acyl derivatives of, and their transformation products (AUWERS and ECKARDT), 1908, A., i, 480.
- mercuriacetate and mercurichloride (MITCHELL and SMITH), 1909, T., 1434; P., 209.
- 4-nitro-, and its acetyl derivative, and mercuriacetate, and 2':4':6'-*tribromo*-4-nitro-, and its acetyl derivative (MITCHELL and SMITH), 1909, T., 1434; P., 209.
- Benzeneazo- α -naphthols**, α - and β -, action of diazomethane on (SMITH and MITCHELL), 1908, T., 845; P., 71.
- 2-Benzeneazo- α -naphthols** (β -*naphthaquinonehydrazones*), reduction products of (NOELTING, GRANDMOUGIN, and FREIMANN), 1909, A., i, 442.
- Benzeneazo- β -naphthol** and *p*-nitro-, copper compounds of (SCHAPOSCHNIKOFF and SVENTOSLAVSKY), 1905, A., i, 161.
- p*-amino-, and its acetyl derivative, preparation of (MELDOLA and EYNON), 1905, T., 3.
- 2:4:6-*tribromo*-, and 2:4-*dichloro*- (ORTON), 1903, T., 808; P., 162.
- tetrabromo*-, 4-chloro-2:6-*dibromo*-, 2-chloro-4:6-*dibromo*-, 2:4-*dichloro*-6-bromo-, and 2:6-*dichloro*-4-bromo- (ORTON and REED), 1907, T., 1562.
- o*- and *m*-chloro- and *o*- and *p*-hydroxy- (v. NIEMENTOWSKI), 1903, A., i, 133.
- p*-chloro- (ORTON and EVERATT), 1908, T., 1020.
- 2:5-*dichloro*- (NOELTING and KOPP), 1905, A., i, 872.
- 3-*trichloro*- (ORTON and SMITH), 1905, T., 395.
- hydroxy-. See Phenol-2-azo- β -naphthol.
- p*-nitro-, formation of lakes by, with aluminium and antimony compounds (STREBINGER), 1912, A., i, 1038.
- o*-, *m*-, and *p*-nitro-, preparation of (HEWITT and MITCHELL), 1906, T., 1169; P., 170.
- Benzene-4-azo-1-naphthol-2-carboxylic acid**, *o*-, *m*-, and *p*-nitro- (HEWITT and MITCHELL), 1907, T., 1260, P., 183.

- 4-Benzeneazo- α -naphthylamine**, *p*-hydroxy-, and its benzoate (WOHL and GOLDENBERG), 1904, A., i, 209.
- Benzeneazo- β -naphthylamine**, condensations of (BUSCH and BERGMANN), 1905, A., i, 309.
- Benzeneazo- β -naphthylamine**, *p*-bromo-, and *p*-chloro-, derivatives of (NORMAN), 1912, T., 1917.
- Benzeneazo- α - and β -naphthylhydrazine-sulphonic acids**, and their salts (TRÖGER and WESTERKAMP), 1910, A., i, 208.
- 1-Benzeneazo-2-naphthyl methyl ether** and *1-p*-hydroxy-, and their hydrochlorides (CHARRIER and FERRERI), 1912, A., i, 812.
- Benzeneazo- α - and β -naphthylsulphurous acids**, salts of (VOROSCHTSOFF), 1911, A., i, 819.
- 3-Benzeneazo-2:5-dinitro-4-acetylaminophenol**, and its sodium salt and *p*-nitro-, and their acetyl derivatives (MELDOLA and KUNTZEN), 1911, T., 40.
- Benzene-*p*-azo-*o*-nitrobenzaldehyde**, hydroxy-. See Phenol-*p*-azo-*o*-nitrobenzaldehyde.
- Benzeneazo-*o*-, -*m*-, and -*p*-nitrobenzaldoximes** (BAMBERGER and PEMSEL), 1903, A., i, 284.
- o*-Benzeneazo-*p*-nitrobenzanilide** (SACHS and SICHEL), 1904, A., i, 156.
- p*-Benzeneazo-*m*-nitrobenzoic acid** and its ethylester (WERNER and PETERS), 1906, A., i, 220.
- 4'-Benzeneazo-2:4-di- and -2:4:6-trinodiphenylamines**, preparation of (v. WALTHER and LEHMANN), 1904, A., i, 352.
- 2- and 4-Benzeneazo-5-nitro-1-naphthols**, *p*-nitro- (KAUFLER and BRÄUER), 1907, A., i, 799.
- Benzeneazo-*o*-nitrophenol**, action of bromine on (HEWITT and WALKER), 1906, T., 182; P., 16.
mercuri-acetate and -bromide (SMITH and MITCHELL), 1908, T., 850.
o-, *m*-, and *p*-nitro-, and their acyl derivatives (HEWITT and MITCHELL), 1905, T., 226; P., 61.
- Benzene-*O*-azo-*p*-nitrophenol** and *p*-bromo-, and **Benzeneazo-*p*-nitrophenol**, *p*-bromo- (DIMROTH and HAKTMANN), 1909, A., i, 67.
- Benzeneazo- ω -nitrophenylacetoneitrile** (PONZIO and GIOVETTI), 1910, A., i, 195.
- Benzene-2-azo-4-nitro-*m*-phenylenediamine**, *p*-bromo- (MORGAN and WOOTTON), 1905, T., 940.
- Benzeneazo- α -nitro- α -phenylethane**, *p*-nitro- (BAMBERGER and SELIGMAN), 1903, A., i, 324.
- 4-Benzeneazo-1-nitroso-5-hydroxy-3-methylpyrazole** (BÜLOW, HAAS, and SCHMACHTENBERG), 1910, A., i, 903.
- ω -Benzeneazo- ω -dinitrotoluene** (PONZIO), 1908, A., i, 483.
 ω -*p*-bromo- (PONZIO), 1909, A., i, 338.
 ω -*o*- and *p*-chloro-, and ω -*o*-bromo- (PONZIO and CHARRIER), 1909, A., i, 444.
- 3-Benzeneazo-5-nitro-2:4-tolylenediamine**, *p*-bromo- and *p*-nitro- (MORGAN and WOOTTON), 1905, T., 940.
- Benzeneazo-*orcinol***, *p*-mono- and *s*-tribromo- (ORTON and EVERATT), 1908, T., 1019.
- Benzeneazo-*orsellinic acid*** and its ethyl ester (HENRICH and DORSCHKY), 1904, A., i, 502.
- N*-Benzeneazo-oxalomonomophenylhydrazidine**, sodium salt of (DIMROTH and MERZBACHER), 1910, A., i, 898.
- Benzeneazoperimidine**, *p*-nitro- (SACHS), 1909, A., i, 427.
- 9-Benzeneazo-10-phenanthrol**, and its acetate and benzoate (AUWERS, DANNEHL, and BOENNECKE), 1911, A., i, 169.
- Benzeneazo-*o*-phenetidine** and -*m*-phenetole (JACOBSON and HÖNIGSBERGER), 1904, A., i, 205.
- Benzeneazophenetole** (*o*-ethoxyazobenzene), acid reduction of (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 202.
bromo-derivatives, reduction of (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 121.
o-, *m*-, and *p*-nitro- (BALY, TUCK, and MARSDEN), 1910, T., 1501.
- o*-Benzeneazophenol**, synthesis of, and *m*-amino-*o*-hydroxy-, acetyl derivative (VOROSCHTSOFF), 1911, A., i, 818.
- p*-Benzeneazophenol**, and its *p*-sulphonic acid (LACHMAN), 1903, A., i, 294.
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- p*-Benzeneazophenol, *p*-amino-, decomposition of (MELDOLA and EYNON), 1905, T., 2.
and its hydrochlorides and their absorption spectra, and *p*-acetyl-amino- (HEWITT and THOMAS), 1909, T., 1294 ; P., 190.
p-hydroxy-, hydrobromide (HANTZSCH), 1909, A., i, 536.
o-nitro- (BORSCHÉ), 1908, A., i, 66.
2':4'-dinitro- (BORSCHÉ), 1908, A., i, 67.
- Benzeneazophenylanthranilic acid** (benzeneazodiphenylamine-*o*-carboxylic acid), and its sulphonic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 353, 637.
- p*-Benzeneazophenyl benzyl ether (HANTZSCH and GLOVER), 1907, A., i, 101.
- 4-Benzeneazophenyl- α -camphoramic acid** (WOOTTON), 1907, T., 1897 ; P., 250.
- Benzeneazo-*p*-phenyl-, *o*-ethoxyphenyl-, α -naphthyl-, and *o*- and *m*-tolyl-carbamides**, and their benzoyl derivatives (PIERRON), 1906, A., i, 772.
- Benzeneazo-*m*-phenylene-dicyanoamide and -dicarbamide** (PIERRON), 1908, A., i, 925.
- Benzeneazo-*m*-phenylenetetramethyldiamine, *m*-nitro-, and its hydrochloride** (SACHS and APPENZELLER), 1908, A., i, 227.
- Benzeneazophenylethylmercaptole and its hydrochloride** (FOX and POPE), 1912, T., 1502 ; P., 200.
- 4-Benzeneazo-1-phenyl-4-ethyl-3:5-pyrazolidone** (MICHAELIS and SCHENK), 1909, A., i, 59.
- 4-Benzeneazo-1-phenyl-3-furyl-5-pyrazolone** (TORREY and ZANETTI), 1910, A., i, 893.
- Benzeneazophenyliminophenylmethane** (BUSCH and RUPPENTHAL), 1911, A., i, 87.
- Benzeneazo-2-phenylindole** (PLANCHER and SONCINI), 1903, A., i, 450.
- Benzeneazophenylmethane** (THIELE), 1910, A., i, 890.
- Benzeneazophenylmethylmercaptole and its salts and *p*-nitro-** (FOX and POPE), 1912, T., 1500 ; P., 200.
- 4-Benzeneazo-5-phenyl-3-methylisoxazole, *p*-amino-, and its *N*-acetyl derivative** (BÜLOW and BUSSE), 1906, A., i, 717.
- 4-Benzeneazo-1-phenyl-5-methylpyrazole and its hydrochloride** (MICHAELIS and KOTELMANN), 1907, A., i, 156.
- 4-Benzeneazo-1-phenyl-5-methylpyrazole, 3-chloro-, and -3-pyrazolone** (MICHAELIS), 1905, A., i, 244.
- 5-Benzeneazo-1-phenyl-3-methylpyrazole and its methochloride, platinichloride, and methiodide** (MICHAELIS and KOBERT), 1909, A., i, 680.
- 4-Benzeneazo-1-phenyl-3-methylpyrazole-5-thioglycollic acid and its silver salt** (MICHAELIS, LEONHARDT, and WAHLE), 1905, A., i, 393.
- Benzeneazo-1-phenyl-3-methyl-5-pyrazolone, 4-bromo- and 4-chloro-** (LAPWORTH), 1903, T., 1124 ; P., 149.
- 4-Benzeneazo-3-phenyl-1-methyl-5-pyrazolone** (MICHAELIS and DORN), 1907, A., i, 247.
- 4-Benzeneazo-1-phenyl-3-methyl-5-pyrazolone-2'-carboxylic acid** (MICHAELIS, KRUG, LEO, and ZIESEL), 1910, A., i, 514.
- 4-Benzeneazo-1-phenyl-3-methyl-5-pyrazolone-3'-carboxylic acid** (MICHAELIS and HORN), 1910, A., i, 517.
- 4-Benzeneazo-1-phenyl-3-methyl-5-pyrazolone-4'-carboxylic acid** (MICHAELIS and HORN), 1910, A., i, 517.
- 4-Benzeneazo-1-phenyl-5-methyl-5-pyrazolone-2'-carboxylic acid** (MICHAELIS and KÄDING), 1910, A., i, 516.
- Benzeneazo-5-phenyl-2-methylpyrrole** (PLANCHER and SONCINI), 1903, A., i, 449.
- 4-Benzeneazo-2-phenyl-1:3-naphthylenediamine and *p*-nitro- and their hydrochlorides** (LEES and THORPE), 1907, T., 1290.
- 4-Benzeneazo-2-phenyl-1:3-naphthylenedimethyldiamine and *p*-nitro-, and their hydrochlorides** (LEES and THORPE), 1907, T., 1301.
- 4-Benzeneazo-3-phenyl-1-*m*-nitro-phenyl-5-pyrazolone** (MICHAELIS and WILLERT), 1908, A., i, 215.
- 4-Benzeneazo-3-phenylisooxazolone, *m*- and *p*-nitro-** (MEYER), 1911, A., i, 341.
- 5-Benzeneazo-1-phenyl-6-pyridazone-3-carboxylic acid, ethyl ester** (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 901.
- 2-Benzeneazo-5-phenylpyrrole** (KHOTINSKY and SOLOWITSCHIK), 1909, A., i, 616.
- 5-Benzeneazo-1-phenyltriazole, 3-thiol-** (FROMM and BAUMHAUER), 1908, A., i, 702.
- Benzeneazophenyltrimethylammonium salts** (VORLÄNDER, LOGOTHETIS, and PEROLD), 1906, A., i, 773.

- 4-Benzeneazophthalylhydrazide**, *p*-amino-, and its hydrochloride (CURTIUS and HOESCH), 1907, A., i, 1080.
- 4-Benzeneazopyrazolidone** (BÜLOW and BOZENHARDT), 1910, A., i, 205.
- 5-Benzeneazo-2-pyridone**, synthesis and reduction of, and its chloro-derivative (MILLS and WIDDOWS), 1908, T., 1372; P., 174.
- p*-Benzeneazoresorcinol benzoate** (KAUFFMANN and KUGEL), 1911, A., i, 930.
- p*-mono- and *s*-tri-bromo- and *p*-nitro-, and their salts (ORTON and EVERATT), 1908, T., 1017.
- Benzeneazosalicylaldehyde**, *o*-nitro-, and its phenylhydrazone (GRANDMOUGIN and FREIMANN), 1908, A., i, 1024.
- p*-nitro-, and its acetyl derivative and phenylhydrazone (HEWITT and MITCHELL), 1907, T., 1262; P., 183.
- Benzeneazosalicylic acid** and *m*- and *p*-nitro-, reduction of, with sodium hyposulphite (GRANDMOUGIN), 1907, A., i, 166.
- methyl ester (COLOMBANO), 1907, A., i, 1091.
- phenyl ester, acetyl derivative of, and *p*-nitro-, esters, and their acetyl derivatives (GRANDMOUGIN and FREIMANN), 1908, A., i, 1024.
- Benzeneazosalicylic acid**, *p*-amino-, and its acetyl and diazo-derivatives (BÜLOW and HAAS), 1911, A., i, 339.
- and its acetyl derivatives, *p*-hydroxy- and *p*-nitro- (GRANDMOUGIN and GUIBAN), 1908, A., i, 927.
- o*-nitro- (ELES and KEIPER), 1903, A., i, 662.
- 4-Benzeneazosalicylic acid** (FINGER and WILNER), 1909, A., i, 536.
- Benzeneazosantalol** (CAIN and SIMONSEN), 1912, T., 1068; P., 140.
- Benzeneazodesmotroposantonin**, *o*-nitro- (SCHMIDT and WEDEKIND), 1903, A., i, 777.
- Benzeneazotetramethyl-2:4-diaminobenzaldehyde**, *m*-nitro- (SACHS and APENZELLER), 1908, A., i, 188.
- 4-Benzeneazothiopyrine** (MICHAELIS and SCHLECHT), 1906, A., i, 614.
- Benzeneazothymol**, *o*-nitro- and 2':4'-di-nitro- (BORSCHKE), 1908, A., i, 66.
- Benzeneazo-*o*-thymotic acid** and its reduction (PUXEDDU), 1906, A., i, 995.
- 3-Benzeneazotoluene**, 2:4'-*di*- and 4:2':4'-*tri*-nitro- (BORSCHKE), 1908, A., i, 67.
- Benzeneazo-*p*-toluene**, 2-nitro- (BAMBERGER and HÜBNER), 1904, A., i, 117.
- Benzene-*o*- and -*p*-azotoluenes**, *o*-nitro- (BAMBERGER and HÜBNER), 1904, A., i, 116.
- 2'-Benzeneazotoluene-5'-arsinic acid**, 4-hydroxy-, and its sodium salts (BARROWCLIFF, PYMAN, and REMFEL), 1908, T., 1898.
- Benzeneazo-*o*-tolueneazo- β -naphthol**, *p*-nitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 162.
- Benzeneazo-*p*-toluene-4-hydrazinesulphonic acid** and its salts (TRÖGER and WESTERKAMP), 1910, A., i, 208.
- Benzeneazo-*o*-toluidine**, *p*-nitro- (AKTIENGESELLSCHAFT FÜR ANILIN-FABRIKATION), 1903, A., i, 373.
- Benzeneazo-*m*-toluidine**, *m*-amino-. See *m*-Anilinoazo-*m*-toluidine.
- 4-Benzeneazo-*m*-tolyl benzoate** (MC-PHERSON and BOARD), 1911, A., i, 818.
- 3-Benzeneazo-*p*-tolyl acetate**, *p*-nitro- (AUWERS, HIRT, and v. DER HEYDEN), 1909, A., i, 438.
- propionate and its hydrazo-derivative (AUWERS, HIRT, and MÜLLER), 1909, A., i, 223.
- Benzeneazo-*m*-tolylcarbamide**, melting point of (PIERON), 1908, A., i, 925.
- Benzeneazo-*p*-tolylidene-*p*-hydrazine** and its hydrochloride (TRÖGER and MÜLLER), 1908, A., i, 1025.
- 4-Benzeneazo-1-*p*-tolyl-5-methylpyrazole** and its hydrochloride (MICHAELIS and KOTELMANN), 1907, A., i, 157.
- 4-Benzeneazo-1-*p*-tolyl-3-methylpyrazole-5-glycollic acid** and its barium salt (MICHAELIS, LEONHARDT, and WAHLE), 1905, A., i, 395.
- Benzeneazotribenzoylmethane**, *p*-bromo-, and its transformation into the hydrazone (DIMROTH and HARTMANN), 1907, A., i, 1090.
- Benzene-*O*- and -*C*-azotribenzoylmethanes** and their *p*-bromo-derivatives (DIMROTH and HARTMANN), 1909, A., i, 67.
- Benzeneazotri-*p*-tolylmethane** (MOTHWURF), 1904, A., i, 879.
- Benzeneazoxy-*o*-benzoic acid** (FREUNDLER), 1911, A., i, 757.
- ω -Benzeneazo-*p*-xylene**, ω -dinitro- (PONZIO and CHARRIER), 1908, A., i, 582.
- Benzeneazo-2:5-xylene-4-hydrazinesulphonic acid**, and its *p*-toluidine salt (TRÖGER and WESTERKAMP), 1910, A., i, 208.
- 5-Benzeneazo-*m*-2-xyleneol** (AUWERS and v. MARKOVITS), 1908, A., i, 630.
- 3-Benzeneazo-*o*-4-xyleneol** and its acetate (AUWERS, HIRT, and v. DER HEYDEN), 1909, A., i, 438.

- 3-Benzeneazo-*m*-4-xylene** acetate (AUWERS, HIRT, and V. DER HEYDEN), 1909, A., i, 438.
- 6-Benzeneazo-*m*-4-xylene** and its benzoyl derivative (BAMBERGER and REBER), 1907, A., i, 644.
- Benzeneazo-*p*-xylylene** and its salts (TRÖGER and WESTERKAMP), 1910, A., i, 208.
- Benzeneazo-**. See also Phenolazo- and Phenylazo-.
- Benzene- α -benzotriazine**, *o*-hydroxy- (FICHTER and FRÖHLICH), 1903, A., i, 723.
- Benzenebisazo-**. See Bisbenzeneazo-.
- Benzenediazo-1-amino-4-bromotetrahydronaphthalene**, *o*- and *p*-nitro- (MORGAN, MICKLETHWAIT, and WINFIELD), 1904, T., 749; P., 110.
- Benzene- β -diazoaminonaphthalene-8-sulphonic acid**, sodium salt (SMITH), 1906, T., 1507; P., 236.
- p*-Benzenediazoamino-*p*-phenyl benzoate**. See *p*-Benzoyloxydiazoaminobenzene.
- Benzenediazoaminophenyl *p*-tolyl sulphide** and *p*-nitro- (V. MEYER and HEIDUSCHKA), 1903, A., i, 809.
- Benzenediazoaminophthalylhydrazide** (CURTIUS and HOESCH), 1907, A., i, 1080.
- Benzenediazoamino-*p*-toluene**, *p*-hydroxy-, and its benzoate and its isomeride (WOHL and GOLDENBERG), 1904, A., i, 209.
- Benzenediazobis-diethyl-, -dimethyl- and -methylethyl-ketoximes and -4-dimethylaminobenzaldoxime** (BRESLER, FRIEDEMANN, and MAI), 1906, A., i, 322.
- Benzenediazo-*as*-dimethyl-4:6-diamino-*m*-xylene**, *p*-nitro- (MORGAN and MICKLETHWAIT), 1907, T., 369.
- Benzenediazohydroxylamino-*p*-toluene**, and *o*-, *m*-, and *p*-bromo-, and *o*-, *m*-, and *p*-nitro-, decomposition of, by hydrogen chloride, and action of bromine on (GEBHARD and THOMPSON), 1909, T., 1117.
- o*-, *m*-, and *p*-nitro-, and *o*-, *m*-, and *p*-bromo- (GEBHARD and THOMPSON), 1909, T., 774.
- Benzenediazoic acid**, dichloro-*p*-nitro-, and its thorium salt (WITT), 1909, A., i, 856.
- Benzenediazomethylaminocamphor**. See Camphorylphenylmethyltriazine.
- Benzenediazonium bromide**, preparation of (CHATTAWAY), 1908, T., 959.
- per*bromides, bromination by means of (BÜLOW and SCHMACHTENBERG), 1908, A., i, 743.
- Benzenediazonium perchlorate** (VORLÄNDER), 1906, A., i, 906; (HOFMANN and ARNOLDI), 1906, A., i, 907.
- chloride, rate of decomposition of (CAIN and NICOLL), 1908, P., 282; (LAMPOUGH), 1909, P., 166.
- action of, on diphenylamine (VIGNON and SIMONET), 1904, A., i, 637.
- action of, on glutaric acid and its ethyl ester (HENRICH and THOMAS), 1908, A., i, 114.
- action of, on *p*-hydroxybenzoic acid (GRANDMOUGIN and FREIMANN), 1907, A., i, 986.
- action of, on substituted hydroxy-fumaric esters (RABISCHONG), 1904, A., i, 273.
- interaction of, with zinc ethyl (BAMBERGER and TICHWINSKY), 1903, A., i, 131; (TICHWINSKY), 1903, A., i, 441; 1904, A., i, 268; 1905, A., i, 92.
- and *p*-chloro-, and *m*-nitro-, compounds of, with antimony trichloride (MAY), 1912, T., 1038.
- acid fluoride and its bromo- and nitro-derivatives (HANTZSCH and VOCK), 1903, A., i, 664.
- hydroxides, the conditions influencing the interchange of halogen and hydroxyl in (ORTON), 1903, T., 796; P., 161; A., i, 297.
- picrate, action of ammonia and amines on (SILBERRAD and ROTTER), 1906, T., 167; P., 13.
- sulphate, action of sulphur dioxide on (TRÖGER, HILLE, and VASTERLING), 1906, A., i, 120; (TRÖGER and FRANKE), 1906, A., i, 992; (TRÖGER, BERLIN, and FRANKE), 1906, A., i, 994.
- Benzenediazonium, *p*-amino-, *N*-acetyl derivative**, perbromide of, preparation (SILBERRAD and SMART), 1906, T., 170; P., 14.
- salts, *N*-benzoyl derivatives of (MORGAN and WOOTTON), 1907, T., 1315.
- carbonate and nitrite, *N*-benzoyl derivatives of (MORGAN and MICKLETHWAIT), 1905, T., 922; P., 180.
- bromide, *N*-acetyl derivative of (BÜLOW and SCHMACHTENBERG), 1908, A., i, 744.
- benzoyl derivative, acetate, chloride, perchlorate, and sulphate (MORGAN and ALCOCK), 1909, T., 1323; P., 202.

- Benzenediazonium**, *p*-bromo- and *p*-nitro-, thioacetates (FRIEDLÄNDER and CHWALA), 1907, A., i, 525.
- s*-*tribromo*-, transformations of derivatives of (ORTON), 1905, T., 99; P., 12.
- action of alkali hydroxides on (BAMBERGER and KRAUS), 1907, A., i, 161.
- and *s*-*trichloro*-, salts of (ORTON), 1903, A., i, 297.
- syn*-cyanide of, action of liquid on (CIUSA), 1906, A., i, 775.
- pentabromo*-, nitrate (JACOBSON, BARTSCH, LOEB, and STEIN-BRENCK), 1909, A., i, 684.
- dichloro*-, *perbromide* of (NOELTING and KOPF), 1905, A., i, 872.
- chlorobromo*-derivatives, replacement of halogen by hydroxyl in (ORTON and REED), 1907, T., 1554; P., 212.
- 4-chloro-2:6-*di*bromo-, 2-chloro-4:6-*di*bromo-, 2:4-*dichloro*-6-bromo-, 2:6-*dichloro*-4-bromo-, hydrogen carbonates and hydrogen sulphates of, replacement of halogen by hydroxyl in (ORTON and REED), 1907, T., 1562; P., 212.
- triiodo*-, chloride (HANTZSCH), 1903, A., i, 665.
- o*-nitro-, *o*-nitrobenzenesulphinate (CLAASZ), 1911, A., i, 695.
- p*-nitro-, chloride (SCHWALBE), 1909, A., i, 445; (BUCHERER), 1909, A., i, 536.
- decomposition of (BUCHERER and WOLFF), 1909, A., i, 272.
- velocity of decomposition of (SCHWALBE), 1905, A., i, 618, 843.
- interaction of, with 5-bromo-*as*(4)-dimethyl-2:4-diamino-toluene (MORGAN and CLAYTON), 1906, T., 1058.
- Benzenediazoniumazide**, *p*-nitro- (HANTZSCH), 1903, A., i, 663.
- Benzenediazo- ψ -semicarbazinocamphor** and its reactions and *p*-bromo-, *p*-chloro-, and *o*-, *m*-, and *p*-nitro-derivatives (FORSTER), 1906, T., 222; P., 31.
- Benzenediazosulphone**, *di*-*o*-nitro- (CLAASZ), 1911, A., i, 695.
- Benzenediazotrimethyl-4:6-diamino-*m*-xylene**, *p*-nitro- (MORGAN and MICKLETHWAIT), 1907, T., 369.
- Benzenedicarboxylic acid**, tetrahydroxy-, diethyl ester (LEUCHS and THEODOR-ESCU), 1910, A., i, 395.
- Benzene-*m*-disulphinic acid** and its salts, and methyl ester (TRÖGER and MEINE), 1904, A., i, 30.
- Benzene-*p*-disulphinic acid** and its salts (TRÖGER and MEINE), 1904, A., i, 31.
- Benzenedisulphinic acids**, *m*- and *p*-, ammonium and silver salts (SUZUKI), 1908, A., i, 871.
- Benzene-*m*-disulphohydroxamic acid** (ANGELI, ANGELICO, and SCURTI), 1904, A., i, 311.
- Benzene-*m*-disulphonanilide** (CHATTAWAY), 1904, T., 1187.
- Benzene-1:4-disulphonanilide** (ZINCKE and FROHNEBERG), 1909, A., i, 643.
- Benzene-*m*-disulphon-*s*-dimethylamide** (CHATTAWAY), 1905, T., 161; P., 7.
- Benzene-*m*-disulphon-halogen- and -alkylhalogen-amides** (CHATTAWAY), 1905, T., 155; P., 7.
- Benzenedisulphonic acid**, *l*-menthylamine salt (KIPPING and MARTIN), 1909, T., 492; P., 67.
- Benzene-*m*-disulphonic acid** and its bromide and chloride (TRÖGER and MEINE), 1904, A., i, 30.
- Benzenedisulphonimides**, *o*-, *m*-, and *p*-, and their salts, and *p*-bromo- of the *o*-imide (SUZUKI), 1908, A., i, 871.
- Benzene-*m*-disulphonphenylchloroamide** (CHATTAWAY), 1904, T., 1187.
- Benzehe-1:4-disulphonyl bromide** (ZINCKE and FROHNEBERG), 1909, A., i, 643.
- Benzene-1:3-disulphonyl-bis-*p*-phenylenediamine** and its diazotisation and -bis-*p*-aminobenzeneazo- β -naphthol (MORGAN and MICKLETHWAIT), 1905, T., 1308; P., 222.
- Benzenedisulphonylhydroxamic acids**. See Benzenedisulphonylhydroxylamines.
- Benzenedisulphonylhydroxylamines**, *o*-, *m*-, and *p*-, and *p*-bromo- of the *o*-compound (SUZUKI), 1908, A., i, 871.
- Benzene formula**. See under Benzene.
- Benzenehexacarboxylic acid**. See Mellitic acid.
- β -**Benzenehydrazo- α -benzoynaphthol** (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.
- Benzenehydrazo-*m*-cresetole** (JACOBSON and HUGERSHOFF), 1904, A., i, 107.
- Benzenehydrazo-*p*-cresol**, acyl derivatives of (AUWERS and ECKARDT), 1908, A., i, 480.
- Benzenehydrazocugenyl acetate** and *p*-chloro- (AUWERS), 1908, A., i, 228.

- Benzenehydrazoformamide.** See Phenyl-semicarbazide.
- Benzenehydrazoformanilide,** *p*-amino-, and its hydrochloride, and *o*-, *m*-, and *p*-nitro- (BORSCHÉ and RECLAIRE), 1907, A., i, 989.
- Benzenehydrazomethyl-diphenyl** (BANDROWSKI and PROKOPECZKO), 1904, A., i, 635.
- Benzenehydrazotri-*p*-tolylmethane** (MOTHWURF), 1904, A., i, 879.
- Benzenepentacarboxylic acid.** See Rhizocholic acid.
- Benzene ring,** new synthesis of the (FICHTER and GREYER), 1903, A., i, 481.
- gradual synthesis of the (DELACRE and GESCHÉ), 1904, A., i, 32; (DELACRE), 1911, A., i, 32.
- and fluorescence (KAUFFMANN and BEISSWENGER), 1904, A., ii, 528; (KAUFFMANN), 1904, A., ii, 690.
- structure of the (v. OSTROMISLENSKY), 1907, A., i, 596; (CHARITSCHKOFF), 1909, A., i, 471.
- orientation in the (OBERMILLER), 1908, A., i, 146; 1910, A., i, 826; 1911, A., i, 960.
- configuration of (VAUBEL; LIFSCHITZ), 1911, A., i, 774.
- equivalence of positions in the (WOHL), 1911, A., i, 57.
- equivalence of positions 2 and 6 in the (NOELTING), 1904, A., i, 394.
- substitution in the (BLANKSMA), 1904, A., i, 565; (HOLLEMAN), 1906, A., i, 489; 1911, A., i, 713; (WIELAND and WECKER), 1910, A., i, 242.
- its reactivity, and the valency strength of its substituting groups of carbon (OBERMILLER), 1907, A., i, 200; (FLÜRSCHHEIM), 1907, A., i, 834.
- effects of substituents in the, lecture experiment (THIELE), 1906, A., ii, 661.
- influence of the CH₃ group on substitution in the (BLANKSMA), 1903, A., i, 164.
- displacement of alkyloxy-groups in the, by hydrogen (SEMMLER), 1908, A., i, 557.
- reversible substitution of alkyloxy-groups in the (BLANKSMA), 1909, A., i, 378.
- replacement of bromine by chlorine in the (EIBNER), 1903, A., i, 471.
- introduction of iodine into the (OSWALD), 1909, A., i, 143.
- scission of, in the organism (JAFFÉ), 1909, A., ii, 914.
- Benzene ring,** non-hydroxylated, of protein, fate of, in the animal body (VASILIU), 1909, A., ii, 250.
- Benzene rings,** formation of (MEERWEIN), 1908, A., i, 89.
- Benzeneseleninic anhydride** (DOUGHTY), 1909, A., i, 296.
- Benzeneselenonic acid** and related compounds (DOUGHTY), 1909, A., i, 296.
- Benzenesulphaminomethyl ethyl ketone** (KOLSHORN), 1904, A., i, 675.
- Benzenesulphinic acid,** and *p*-bromo- and *p*-chloro-, preparation of (KNOEVENAGEL and KENNER), 1908, A., i, 971.
- action of, on aromatic amines and phenols (HINSBERG), 1903, A., i, 251.
- alkaloidal salts, and their rotatory power (HILDITCH), 1908, T., 1621.
- aniline salt (VALLÉE), 1908, A., i, 976.
- ferrie salt, reactions of (THOMAS), 1909, T., 343.
- Benzenesulphinic acid,** *p*-chloro- (TRÖGER and HILLE), 1905, A., i, 337.
- 1-chloro-4-nitro-, and *o*-nitro-, and its sodium salt and ethyl ester (CLAASZ), 1911, A., i, 437.
- o*-cyano- (WALKER and SMITH), 1906, T., 355; P., 62.
- p*-iodo- (TRÖGER and VOLKMER), 1905, A., i, 356.
- Benzenesulphinic anhydride** and *p*-bromo- and *p*-iodo-, preparation of (KNOEVENAGEL and POLACK), 1908, A., i, 971.
- Benzenesulphinyl chloride** (HILDITCH and SMILES), 1909, A., i, 19.
- Benzenesulpho-** See also Benzenesulphon-, and Benzenesulphonyl-.
- Benzenesulphodianthranyl** (HELLER), 1904, A., i, 160.
- Benzenesulphoheptadecylamide** (HINSBERG and KESSLER), 1905, A., i, 339.
- Benzenesulphohydroxamic acid,** reaction of, with aldehydes (ANGELI and MARCHETTI), 1909, A., i, 12.
- Benzenesulphomethylamide,** action of pure nitric acid on (BACKER), 1905, A., i, 766.
- Benzenesulphomethylanilide,** amino-, and nitro- (ULLMANN and GROSS), 1910, A., i, 887.
- Benzenesulphomethylguanidine** (ACKERMANN), 1906, A., i, 768.
- Benzenesulphomethylpicramide** (OPOLSKI), 1910, A., i, 726.
- Benzenesulpho-methylpropyl-,** and -ethyl-*n*- and -*iso*-propyl-amides, synthesis of (MULDER), 1906, A., i, 484.

- Benzenesulphon-**. See also Benzene-sulpho-, and Benzenesulphonyl-.
- Benzenesulphonacetic acid**, amide, nitrile, and thioamide of, and their bromo-, chloro-, and iodo-derivatives (TRÖGER and HILLE), 1905, A., i, 336.
- Benzenesulphonacetiminoethyl ether hydrochloride** (TROGER and HILLE), 1905, A., i, 337.
- Benzenesulphonacetonitrile**, *p*-bromo- and *p*-chloro-, sodium derivatives, and the action of benzyl chloride on (TRÖGER and VASTERLING), 1905, A., i, 871.
- Benzene-*m*-sulphonalkylamides**, nitro- (CHATTAWAY), 1905, T., 159; P., 7.
- Benzenesulphonamide**, action of, on carboxylic acids (ROUILLER), 1912, A., i, 584.
- Benzenesulphonamide**, *o*-amino-, and its acetyl, methyl and carbamide derivatives (EKBOM), 1903, A., i, 411.
- Benzenesulphonamino-*o*-azo-*p*-toluene** (BUSCH and BERGMANN), 1905, A., i, 308.
- 8-Benzenesulphonamino-*α*-naphthol-4-sulphonic acid** (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 250.
- Benzenesulphonanilide** and *m*-nitro- (CHATTAWAY), 1904, T., 1187.
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- Benzenesulphonanilide**, *o*-amino-, and its hydrochloride and hydroxy-, and *o*-nitro- (ULLMANN and GROSS), 1910, A., i, 887.
o-chloro- (v. BRAUN), 1904, A., i, 734.
p-iodo- (ULLMANN), 1904, A., i, 727.
- N*-Benzenesulphonanthranilic acid** (v. PAWLEWSKI), 1905, A., i, 437.
- Benzenesulphonaphthalides**, action of sodium hypochlorite on (RAPER, THOMPSON, and COHEN), 1904, T., 371; P., 55.
- Benzenesulphonylchloroamides** and *m*-nitro- (CHATTAWAY), 1904, T., 1181; P., 168.
- p*-Benzenesulphonbenzoic acid** and its barium salt (WEEDON and DOUGHTY), 1905, A., i, 346.
- Benzenesulphonbenzyl-*o*-nitroanilide** (OPOLSKI), 1903, A., i, 726.
- Benzenesulphonchloroalkylamides** (CHATTAWAY), 1904, P., 208.
- Benzenesulphon- ψ -cumide** (HINSBERG and KESSLER), 1905, A., i, 339.
- Benzenesulphonylcyano-anilide**, *p*-anisidide, -ethylamide, -methylanilide, and *p*-toluidide (v. BRAUN), 1904, A., i, 734.
- Benzenesulphondialkylacetonitriles** and their *p*-bromo-, *p*-chloro-, and *p*-iodo- derivatives (TRÖGER and VASTERLING), 1905, A., i, 870.
- Benzenesulphondibromoamide**, action of, with sulphuric acid (KASTLE), 1911, A., i, 361.
- Benzenesulphondipropylthioacetamide** (TRÖGER and VASTERLING), 1905, A., i, 871.
- Benzenesulphon**, *di-o*-nitro- (CLAASZ), 1911, A., i, 695.
- Benzenesulphon-carbamide** and its *N*-acyl, phenyl, and phenylethyl derivatives and -carbimide and its compound with hydrogen iodide (BILL-ETER), 1904, A., i, 397.
- Benzenesulphonethenylaminoxime** and *p*-bromo-, *p*-chloro-, and *p*-iodo- (TRÖGER and VOLKMER), 1905, A., i, 356.
- Benzenesulphonethyl-*p*-xylylide** (HINSBERG and KESSLER), 1905, A., i, 339.
- Benzenesulphon-halogen- and -alkyl-halogen-amides** and nitro- (CHATTAWAY), 1905, T., 148; P., 7.
- Benzenesulphonic acid**, sulphonation of (POLAK), 1911, A., i, 30.
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ω-dichloro-*o*-tolyl ester (RASCHIG), 1911, A., i, 637.
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Benzenesulphonic acid, methyl ester, hydrolysis of (PRAETORIUS), 1905, A., i, 186; 1906, A., i, 736.

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p-bromo-*o*-cyano-, and its salts, and chloride (BLANCHARD), 1904, A., i, 164.

3:5-*di*bromo-4-nitroamino-, and its salts (LENZ), 1904, A., i, 458.

3:4-*dichloro*-, nitration of (AKTIEN GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1907, A., i, 203.

2:3:4:5-*tetrachloro*-, and its salts (NOELTING and BATTEGAY), 1906, A., i, 221.

1-chloro-2:6-*di*amino-, and azo-dyes from (BADISCHE ANILIN- & SODA-FABRIK), 1904, A., i, 536.

2-chloro-3:5-*dinitro*-, and its potassium salt (ULLMANN and HERRE), 1909, A., i, 476.

4-chloro-3:5-*dinitro*-, potassium salt, and sulphonyl chloride from (ULLMANN and KUHN), 1909, A., i, 475.

2:4-*dichloro*-5-nitro-, sodium salt (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 973.

o-cyano-, and chloride, preparation and reactions of (WALKER and SMITH), 1906, T., 350; P., 62. amide and chloride of (BRADSHAW), 1906, A., i, 359.

4-fluoro-3-nitro- (HOLLEMAN), 1905, A., i, 424.

3-iodo-, sodium salt (BOYLE), 1909, T., 1694.

p-iodo-, *p*-iodoso-, and *p*-iodoxy-, derivatives of (WILLGERODT and KLINGER), 1912, A., i, 255.

2:3-*di*-iodo-, and its salts and derivatives, and 2:3:4:5-*tetra*iodo-, salts and derivatives, and 2-iodo-4-nitro-, potassium salt, and 2:3-*di*-iodo-5-nitro-, and its salts (BOYLE), 1911, T., 330; P., 9.

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5-iodo-2-nitro-, potassium salt (BOYLE), 1909, T., 1700.

m-nitro-, reduction of (ELBS and WOHLFAHRT), 1903, A., i, 212.

Benzenesulphonic acid, *m*-nitro-, potassium salt, action of potassium cyanide on (HOLLEMAN), 1905, A., i, 595.

o- and *p*-nitro-, electrolytic reduction (ELBS and WOHLFAHRT), 1903, A., i, 80; (WOHLFAHRT), 1903, A., i, 203.

3:5-*dinitro*-, amide, and chloride (JACKSON and EARLE), 1903, A., i, 40.

p-nitroamino-, and its salts (ZINCKE and KUCHENBECKER), 1904, A., i, 457.

Benzenesulphonic anhydride (BILLETER), 1905, A., i, 584.

Benzenesulphonic methylanilide, *p*-iodo- (ULLMANN), 1904, A., i, 727.

Benzenesulphonic peroxide (WEINLAND and LEWKOWITZ), 1903, A., i, 808.

Benzenesulphonitroanilides, salts, and *N*-methyl derivatives of (OPOLSKI), 1907, A., i, 908.

Benzenesulpho-*o*-nitroethylanilide (OPOLSKI), 1910, A., i, 726.

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Benzenesulphonyl chloride, preparation of (PUMMERER), 1909, A., i, 465, 561; (ULLMANN), 1909, A., i, 465.

Benzenesulphonylaminoacetone nitrile and its alkyl and acyl derivatives (JOHNSON and MCCOLLUM), 1906, A., i, 156.

p-**Benzenesulphonylamino**benzonitrile (BOGERT and WISE), 1911, A., i, 46.

ω-**Benzenesulphonylamino**benzylamines, preparation of, and the action of nitrous acid on (MORGAN and MICKLETHWAIT), 1906, T., 1161; P., 174.

Benzenesulphonyldiaminomesitylene and its diazotisation and azo-*β*-naphthol derivative (MORGAN and MICKLETHWAIT), 1906, T., 1299; P., 240.

1-**Benzenesulphonyl**-1:2:4-*tri*aminonaphthalene (MORGAN and GODDEN), 1910, T., 1716.

Benzenesulphonyl-5- and -8-aminonaphthalene-1-azo-*β*-naphthols (MORGAN and MICKLETHWAIT), 1906, T., 9.

4'-**Benzenesulphonylamino**-4-nitrodiphenyl and its *N*-methyl derivative (MORGAN and HIRD), 1907, T., 1507.

p-**Benzenesulphonylamino**phenyl-2:3-dimethyl-5-pyrazolone, and 4-bromo-, and 4-nitroso- (MICHAELIS, GRAFF, GESING, and BOIE), 1911, A., i, 233.

Benzenesulphonyl-*ω*-aminotoluene-2-, -3-, and -4-azo-*β*-naphthols (MORGAN and MICKLETHWAIT), 1906, T., 1163; P., 174.

- 4-Benzenesulphonyl-4:6-diamino-*m*-xylene** and its diazotisation and azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1906, T., 1296; P., 240.
- Benzenesulphonylanilide**, *p*-iodo- (ZINCKE and JÖRG), 1911, A., i, 41.
- Benzenesulphonyl-*p*-anisidide**, *m*-nitro-, 2:5- and 3:5-*d*-nitro-, and their derivatives (REVERDIN and DE LUC), 1912, A., i, 182.
- Benzenesulphonylanthranilic acid**, methyl ester (SCHROETER and EISLEB), 1909, A., i, 576.
- Benzenesulphonylanthranoylbenzenesulphonylanthranilic acid**, ethyl ester (SCHROETER and EISLEB), 1909, A., i, 576.
- Benzenesulphonylanthranoylmethylanthranilic acid** and its methyl and ethyl esters, and compound with thionyl chloride (SCHROETER and EISLEB), 1909, A., i, 578.
- Benzenesulphonylauramine** and its compound with stannic chloride (SEMPER), 1911, A., i, 580.
- Benzenesulphonylbenzidine**, azo- and diazo-derivatives of (MORGAN and HIRD), 1907, T., 1505; P., 209.
- Benzenesulphonyl-4-bromo- α -naphthylamine** (MORGAN and GODDEN), 1910, T., 1710.
- 1- and 2-Benzenesulphonyl-4-bromo-1:2-naphthylenediamines** (MORGAN and GODDEN), 1910, T., 1709; P., 165.
- 1-Benzenesulphonyl-4-bromonaphthylene-2-diazo-1-imide** (MORGAN and GODDEN), 1910, T., 1712; P., 165.
- 2-Benzenesulphonyl-4-bromonaphthylene-1-diazo-2-imide** (MORGAN and GODDEN), 1910, T., 1710; P., 165.
- Benzenesulphonylcarbamie acid**, ethyl and phenyl esters (BILLETER), 1904, A., i, 397.
- Benzenesulphonylcarbamide**, benzoyl derivative (BILLETER), 1903, A., i, 821.
- Benzenesulphonylcarbimide** (BILLETER), 1903, A., i, 484.
- Benzenesulphonylclupeine** (HIRAYAMA), 1909, A., i, 344.
- 1-Benzenesulphonyl-2-ethoxypyrrolidine** (WOHL, SCHÄFER, and THIELE), 1906, A., i, 105.
- Benzenesulphonyl-*p*-hydroxyphenylethylmethylamine** (WALPOLE), 1910, T., 947.
- Benzenesulphonyliminopyrine** (STOLZ), 1904, A., i, 113.
- Benzenesulphonylmandelonitrile** (FRANCIS and DAVIS), 1909, T., 1408.
- Benzenesulphonyl-*p*-methoxyphenylethylamine** (WALPOLE), 1910, T., 946.
- ω -Benzenesulphonyl- ω -methyl-*o*- and *m*-aminobenzylamines**, preparation of, and their diazotisation (MORGAN and MICKLETHWAIT), 1906, T., 1165; P., 174.
- as*-Benzenesulphonyl-*N*-methyl-8-aminonaphthalene-1-azo- β -naphthol** (MORGAN and MICKLETHWAIT), 1906, T., 12.
- Benzenesulphonylmethyl- ω -aminotoluene-2- and -3-azo- β -naphthols** (MORGAN and MICKLETHWAIT), 1906, T., 1167; P., 174.
- 4-Benzenesulphonylmethyl-4:6-diamino-*m*-xylene** and its diazotisation and azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1906, T., 1297.
- as*-Benzenesulphonylmethylbenzidine** and its diazotisation (MORGAN and HIRD), 1907, T., 1508; P., 209.
- Benzenesulphonylmethyldianthranilide** (SCHROETER and EISLEB), 1909, A., i, 578.
- Benzenesulphonyl-*N*-methyl- α -naphthylamine**, 8-nitro- (MORGAN and MICKLETHWAIT), 1906, T., 12.
- 2-Benzenesulphonyl-2-methyl-1:2-naphthylenediamine** (MORGAN and MICKLETHWAIT), 1912, T., 151.
- as*-Benzenesulphonyl-*N*-methyl-1:8-naphthylenediamine** and its diazo-derivative (MORGAN and MICKLETHWAIT), 1905, P., 304; 1906, T., 12.
- Benzenesulphonylmethyl-*o*-, *m*-, and *p*-nitroanilines** and their reduction (MORGAN and MICKLETHWAIT), 1905, T., 84.
- Benzenesulphonylmethyl-1-nitro- β -naphthylamine** (MORGAN and MICKLETHWAIT), 1912, T., 151.
- Benzenesulphonylmethyl-6-nitro-*m*-4-xylylidine** (MORGAN and MICKLETHWAIT), 1906, T., 1297.
- as*-Benzenesulphonylmethylphenylenediamines** and their diazotisation and azo- β -naphthol derivatives (MORGAN and MICKLETHWAIT), 1905, T., 85; P., 9.
- 1-Benzenesulphonyl-3-methylpyrazolone**, 5-chloro-, and 5-chloro-4-bromo- (MICHAELIS and LACHWITZ), 1910, A., i, 641.
- Benzenesulphonylmorphine** and its benzenesulphonate (WIRLAND and KAPPELMEIER), 1911, A., i, 746.
- Benzenesulphonyl- β -naphthalide**, *o*-amino-, and *o*-nitro- (ULLMANN and GROSS), 1910, A., i, 887.

- Benzenesulphonyl- α -naphthylamine**, 5- and 8- nitro-, and their reduction (MORGAN and MICKLETHWAIT), 1905, P., 303; 1906, T., 8.
- 2-Benzenesulphonyl-1:2-naphthylene-diamine** and its formyl derivative (MORGAN and GODDEN), 1910, T., 1714.
- Benzenesulphonyl-1:4-naphthylenediamine** and its diazotisation and azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1905, T., 928; P., 179.
- Benzenesulphonylnaphthylenediamines**, 1:5- and 1:8-, diazo-derivatives of (MORGAN and MICKLETHWAIT), 1905, P., 303; 1906, T., 4.
- Benzenesulphonylnaphthylene-2:3-diazoimide** (MORGAN and GODDEN), 1910, T., 1718.
- 1-Benzenesulphonylnaphthylene-2-diazo-1-imide** (MORGAN and GODDEN), 1910, T., 1717.
- 2-Benzenesulphonylnaphthylene-1-diazo-2-imide** (MORGAN and GODDEN), 1910, T., 1715.
- N*-Benzenesulphonyl- α -naphthylethylamine** (MORGAN and MICKLETHWAIT), 1907, T., 1516.
- Benzenesulphonyl-*o*-, *m*-, and *p*-nitroanilines** (MORGAN and MICKLETHWAIT), 1905, T., 79.
- Benzenesulphonyl-2-nitro-4-bromo- α -naphthylamine** (MORGAN and GODDEN), 1910, T., 1711.
- Benzenesulphonyl-4-nitro-1-naphthylamine** (MORGAN and MICKLETHWAIT), 1905, T., 928; P., 179.
- Benzenesulphonyl-1-nitro- β -naphthylamine** (MORGAN and GODDEN), 1910, T., 1714.
- Benzenesulphonyl-2:4-dinitro- α -naphthylamine** (MORGAN and GODDEN), 1910, T., 1715.
- Benzenesulphonyl-*p*-nitrophenylethylamine** and its methyl derivative (JOHNSON and GUEST), 1910, A., i, 311.
- Benzenesulphonylnitrosomethylhydrazine** (THIELE), 1910, A., i, 889.
- Benzenesulphonyl-4-nitro-*o*-toluidine** (MORGAN and MICKLETHWAIT), 1906, T., 1294.
- Benzenesulphonyl-5-nitro-*o*-toluidine** (MORGAN and MICKLETHWAIT), 1905, T., 925; P., 179.
- Benzenesulphonyl-2-nitro-*p*-toluidine** and its diazotisation (MORGAN and MICKLETHWAIT), 1906, T., 1293.
- Benzenesulphonyl-5-nitro-*p*-xyldine** (MORGAN and MICKLETHWAIT), 1905, T., 926; P., 179.
- Benzenesulphonylperoxysulphonic acid**, potassium salt (WILLSTÄTTER and HAUSENSTEIN), 1909, A., ii, 567.
- Benzenesulphonylphenylenediamines**, diazo-derivatives of the, and their diazoimides and azo- β -naphthol derivatives (MORGAN and MICKLETHWAIT), 1905, T., 73; P., 8.
- Benzenesulphonyl-*p*-phenylenediazoimide**, interaction of with benzenoid and naphthalenoid amines (MORGAN and MICKLETHWAIT), 1907, T., 1512; P., 209.
- Benzenesulphonylphenylethylamine** and -methylamine (JOHNSON and GUEST), 1909, A., i, 785.
- 1-Benzenesulphonyltetrahydroquinoline** and its 2-methyl derivative (VAN DORP), 1905, A., i, 82.
- 2-Benzenesulphonyl-2:4-tolylenediamine** and its diazotisation and azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1906, T., 1294; P., 240.
- Benzenesulphonyl-2:5-tolylenediamine**, diazotisation of, and its azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1905, T., 925; P., 179.
- Benzenesulphonyltryptophans** (ELLINGER and FLAMAND), 1908, A., i, 378.
- Benzenesulphonyl-*p*-xylylene-2:5-diamine** and its diazotisation and azo- β -naphthol derivative (MORGAN and MICKLETHWAIT), 1905, T., 926; P., 179.
- Benzenesulpho-*m*-toluidide** (HINSBERG and KESSLER), 1905, A., i, 339.
- Benzenesulphotoluidides**, and *m*-nitro- (CHATTAWAY), 1904, T., 1187. action of sodium hypochlorite on (RAPER, THOMPSON, and COHEN), 1904, T., 371; P., 55.
- Benzenesulpho-*o*-xylidide** (HINSBERG and KESSLER), 1905, A., i, 339.
- Benzenesulpho-4-*m*-xylidide**, action of sodium hypochlorite on (RAPER, THOMPSON, and COHEN), 1904, T., 371; P., 55.
- Benzenetetra-carboxylic acids**. See Mellophanic and Prehnitic acids.
- Benzenetricarboxylic acids**. See Hemimellitic acid, and Trimellitic acid.
- Benzenetriozone**. See Ozobenzene.
- Benzene-1:3:5-trisulphonylter-*p*-aminobenzene-azo- β -naphthol** (MORGAN and PICKARD), 1910, T., 56.
- Benzene-1:3:5-trisulphonylter-*m*- and *p*-nitroanilines** (MORGAN and PICKARD), 1910, T., 54.

- Benzene-1:3:5-trisulphonylter-*p*-phenylene-diamine and -diazonimide** (MORGAN and PICKARD), 1909, P., 300; 1910, T., 55.
- Benzenylamidine**, *m*-bromo-, *p*-cyano-, and *m*- and *p*-nitro-, benzenesulphonates (ROUILLER), 1912, A., i, 584.
- Benzenylamino-oxime** (WIELAND and BAUER), 1906, A., i, 412.
- Benzenyl-4-amino-3-thiocresol** platini-chloride (WHEELER and LIDDLE), 1910, A., i, 17.
- 4:4'-Benzenylbis-1:3:5-phenylmethylpyrazolone and *p*-chloro- and nitro-derivatives** (MICHAELIS and ZILE), 1906, A., i, 216.
- Benzenylnitrosolic acid and its salts** (WIELAND and BAUER), 1906, A., i, 412.
- Benzenyl-1:3:5-phenylmethylpyrazolone-1':3'-phenylmethylpyrazole and its additive salts and *p*-chloro- and nitro-derivatives** (MICHAELIS and ZILE), 1906, A., i, 216.
- Benzenylpiperidylloxime** (LEY and KRAFFT), 1907, A., i, 302.
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- Benzethylamide**, imide chloride of (LANDER), 1903, T., 320; P., 15.
- Benzhydrazide-oxime and its hydrochloride** (WIELAND), 1909, A., i, 885.
- Benzhydrol** (*diphenylcarbinol*) (MACKENZIE and JOSEPH), 1904, T., 791; P., 124.
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- Benzhydrol**, 3:5-*di*bromo-4-amino-, and its action with bromine (CLARKE and ESSELEN), 1911, A., i, 725.
- di*-bromo-4-hydroxy-, and its methyl ether and their acetyl derivatives (ZINCKE and WALTER), 1904, A., i, 1006.
- tetrabromo-p*-*di*hydroxy- and its triacetate and *tetrachloro**di*hydroxy-, and their transformation products (ZINCKE and BIRSCHER), 1908, A., i, 781.
- hexabromod*hydroxy-, and its mono- and tri-acetates and methyl and ethyl ethers (ZINCKE and KRÜGENER), 1904, A., i, 402.
- p*-chloro- (MONTAGNE), 1907, A., i, 855.
- 5-chloro-2-amino-4'-hydroxy-, and 5-chloro-4'-hydroxy- (ZINCKE and SIEBERT), 1906, A., i, 515.
- 3:5-*di*chloro-2-hydroxy- (ANSCHÜTZ and SHORES), 1906, A., i, 516.
- di*hydroxy-, and its penta-acetyl derivative (CROSS and BEVAN), 1911, T., 1455.
- 2:4-*di*hydroxy-, and its dipotassium compound (POPE and HOWARD), 1910, T., 80.
- p*-iodo- (ULLMANN), 1904, A., i, 728.
- Benzhydrols**, synthesis of (MASSON), 1903, A., i, 28.
- Benzhydrol-4-azodimethylaniline** and its derivatives (TORREY and PORTER), 1911, A., i, 340.
- Benzhydrol-4-azo- β -naphthol** (TORREY and PORTER), 1911, A., i, 340.
- Benzhydrol ether** (WEDEKIND and SCHENK), 1911, A., i, 190.
- Benzhydroxamic acid** (MARQUIS), 1905, A., i, 524.
- transformation of, into anilides (PONZIO and GIOVETTI), 1908, A., i, 726.
- Benzhydroxamic acid**, *m*-hydroxy-, and its copper salt (ANGELI and CASTELLANA), 1909, A., i, 308.
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- 1-Benzhydryl-3:5-dimethylpyrazole** (DARAPSKY), 1903, A., i, 368.
- p*-**Benzhydryldiphenyl- α -naphthylmethyl chloride** and *p*-**tolylmethyl bromide** (TSCHITSCHIBABIN), 1908, A., i, 872.
- Benzhydrylhydrazine** and its salts, diacyl, and nitroso-derivatives (DARAPSKY), 1903, A., i, 367, 368.
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- Benzhydrylidenedimethylbenzocycloheptadiene** (STAUDINGER and KON), 1911, A., i, 879.
- Benzhydrylidenediphenylbenzocycloheptadiene** (STAUDINGER and KON), 1911, A., i, 879.
- γ -**Benzhydrylidenepentamethylene oxide** (STAUDINGER and KON), 1911, A., i, 879.
- 1-Benzhydryl-3-methyl-5-pyrazolone** and its 4-benzylidene and 4-isonitroso-derivatives (DARAPSKY), 1903, A., i, 368.
- Benzhydryl-4-phenylsemithiocarbazide and -semicarbazide** (DARAPSKY), 1903, A., i, 368.
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- Benzhydrylthiocarbimide** (v. BRAUN and DEUTSCH), 1912, A., i, 694.
- Benzhydrylthiosemicarbazide** and its benzylidene derivative (v. BRAUN and DEUTSCH), 1912, A., i, 694.
- o*-**Benzhydryltolhydrylbenzene** (GUYOT and VALLETTE), 1911, A., i, 652.
- 1-Benzhydryl-4-*p*-tolylhydrazone-3-methylpyrazolone** (DARAPSKY), 1903, A., i, 368.
- o*-**Benzhydryltriphenylcarbinol** (GUYOT and CATEL), 1905, A., i, 226, 540; 1907, A., i, 76.
- p*-**Benzhydryltriphenylcarbinol** and its ethyl ether, bromide, and chloride (TSCHITSCHIBABIN), 1908, A., i, 625.
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- 3-hydroxy-, and its *N*-bis-*p*-methoxybenzylidene derivative (JACOBSON and HÖNIGSBERGER), 1904, A., i, 206.
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- Benzidine reaction**, medico-legal aspect of, in examination of blood-stains (BORDAS), 1910, A., ii, 364.
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- Benzidinodisobutyronitrile** and its amide (BUCHERER and GROLEE), 1906, A., i, 350.
- 2-Benzidine- α -naphthaquinone** and *oo'*-dichloro-, and their derivatives (PUMMERER and BRASS), 1911, A., i, 655.
- Benzidylcamphoformenamine** (TINGLE and BATES), 1911, A., i, 55.
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- Benzil**, 4:4'-dibromo-, and its diacetyl derivative (BILTZ and RIMPEL), 1908, A., i, 574; (BILTZ), 1908, A., i, 575.

- Benzil**, 4:4'-dibromo-, and its oxime and phenylhydrazone (BILTZ, EDLEFSEN, and SEYDEL), 1910, A., i, 570.
- tetrabromo- and tetrachloro-, di-p-hydroxy-*, and their diacetates (ZINCKE and FRIES), 1903, A., i, 183.
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- β -**Benzil- β -naphthyllosazone** (PADOA and SANTI), 1910, A., i, 779.
- β -**Benzil- α -naphthyl- and 1:3:4-xylylosazones** (PADOA and BOVINI), 1912, A., i, 223.
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- α -**Benzilmono-oxime**, metallic compounds of (TSCHUGAEFF and KARASSEFF), 1907, A., i, 831.
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- β -**Benzil-m-tolylosazone** (PADOA and SANTI), 1911, A., i, 693.
- β -**Benzil-o- and -p-tolylosazones** (PADOA and SANTI), 1910, A., i, 779.
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- Benziminazole-2-benzoic acid** and its ethyl ester (THIELE and FALK), 1906, A., i, 751.
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- Benziminazole-nearsinic acid** (BERTHEIM), 1911, A., i, 1056.
- Benziminoazopiperidine**, *p*-nitro-, and its dibenzoyl derivative (SPIEGEL and KAUFMANN), 1908, A., i, 293.
- Benziminomethyl ether**, methyl hydrogen sulphate, and platinichloride (MATSUI), 1910, A., i, 695.
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- Benzimino-methyl and -ethyl ethers**, *o*-chloro- (LANDER and JEWSON), 1903, T., 767; P., 160.
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- α -Benzoacetylaminopyridine** (PALAZZO and TAMBURINI), 1911, A., i, 327.
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- o*-Benzobetaine** and its additive derivatives and ***p*-Benzobetaine** (WILLSTÄTTER and KAHN), 1904, A., i, 235.
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- Benzoceramidone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 794.
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- Benzocycloheptadienone** and its dibromide (THIELE and WEITZ), 1910, A., i, 854.
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- Benzoic acid**, 2:4- and 3:5-*d*-nitro-, esterification of, by means of alcoholic hydrogen chloride (KAILAN), 1907, A., ii, 674.
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- 2:4:6-*tri*-nitro-, methyl ester (WERNER and SEYBOLD), 1904, A., i, 1013.
- 2-nitro-4-amino-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 230.
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- 5-nitro-3-amino-4-cyano-2:6-*di*hydroxy-, ethyl ester and ammonium salt of (BORSCHKE and GAHRTZ), 1905, A., i, 895.
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- m*-nitroimino-, methyl ester, catalysis of (DERBY), 1908, A., i, 419.
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- o*-thiocyano-, and its methyl ester (FRIEDLÄNDER and MÜLLER), 1907, A., i, 335.
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- Benzoic selenonimide** ("selenosaccharin") (LESSER and WEISS), 1912, A., i, 644.
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- Benzoisopyrazolone**. See *iso*Indazolone.
- Benzopyrogallol**. See Alizarin-yellow.
- Benzo- γ -pyrone** (*chromone*), salts of (GOMBERG and CONE), 1910, A., i, 872.
- Benzo- γ -pyrone**, 7:8-dihydroxy-, and its diacetate, synthesis of (DAVID and v. KOSTANECKI), 1903, A., i, 272.
- Benzo- γ -pyrone-6-carboxylic acid**, 7-hydroxy- (LIEBERMANN and LINDENBAUM), 1909, A., i, 403.
- Benzopyronium** and its salts and homologues (DECKER and v. FELLENBURG), 1907, A., i, 1064.
- derivatives, synthesis of (DECKER and v. FELLENBURG), 1909, A., i, 116.
- Benzopyrylium derivatives**, synthesis of (DECKER and v. FELLENBURG), 1907, A., i, 950.
- o*-Benzoquinhydrone, octachloro-, and its reactions (JACKSON and CARLETON), 1908, A., i, 427.
- N*-Benzoquinhydrone dihydriodide periodide (RICHTER), 1912, A., i, 55.
- o*-Benzoquinone (WILLSTÄTTER and PFANNENSTIEL), 1905, A., i, 144.
- two forms of (WILLSTÄTTER and MÜLLER), 1908, A., i, 731; (KEHRMANN), 1911, A., i, 883.

- o*-Benzoquinone, action of unsymmetrical benzoylphenylhydrazine on (Mc-PHERSON and LUCAS), 1909, A., i, 193.
- o*-Benzoquinone, *tetrabromo*-, derivatives of (JACKSON and RUSSE), 1906, A., i, 288.
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- additive compounds of (JACKSON and PORTER), 1903, A., i, 266; 1904, A., i, 254.
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- action of sodium hydroxide on (JACKSON and FISKE), 1909, A., i, 657.
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- tetrachloro*-, derivatives of (JACKSON and MACLAURIN), 1906, A., i, 97; 1907, A., i, 856; (JACKSON and CARLETON), 1908, A., i, 427; (JACKSON and KELLEY), 1912, A., i, 275.
- hydroxy-, and its acetyl derivative (PERKIN and STEVEN), 1906, T., 803; P., 114.
- m*-Benzoquinone (*resorquinone*) (MEYER and DESAMARI), 1909, A., i, 657.
- m*-Benzoquinone, *tribromo*- (MEYER and DESAMARI), 1908, A., i, 658; (ZINCKE and SCHWABE), 1909, A., i, 241.
- chlorodibromo- (ZINCKE and SCHWABE), 1909, A., i, 242.
- p*-Benzoquinone, constitution of (HARTLEY), 1908, P., 285; 1909, T., 52.
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- p*-Benzoquinone, electrolytic oxidation of (KEMPF), 1911, A., i, 464.
- mechanism of reactions of (POSNER), 1911, A., i, 554.
- oxidation of amino-acids by (TRAUBE), 1911, A., i, 960.
- action of azoimide on (ESCALES), 1905, A., i, 145.
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- action of hydrogen chloride on (MICHAEL and COBB), 1910, A., i, 748.
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- metallic haloids (MEYER), 1908, A., i, 731.
- picrate (BRUNI and TORNANI), 1905, A., i, 270.
- p*-Benzoquinone, 2:6-*diamino*-, dibenzoyl derivative (MELDOLA and HOLLELY), 1912, T., 930.
- 2-amino-5-hydroxy- (KEHRMANN and PRAGER), 1907, A., i, 448.
- m*-dibromo-, chloro-, *m*- and *p*-*dichloro*-, and *trichloro*-, β -lactones from (STAUDINGER and BEREZA), 1911, A., i, 461.
- tetrabromo*- and *tetrachloro*- (*bromo*- and *chloroanils*), action of potassium iodide on (TORREY and HUNTER), 1905, A., i, 217.
- tetrabromo*-, *tetrachloro*-, and *tetraiodo*-, derivatives of (TORREY and HUNTER), 1912, A., i, 475.
- 2-bromo-4-chloroimino-, and 2-chloro-6-bromo-4-chloroimino- (RAIFORD), 1911, A., i, 993.
- dibromodicyano*-, *chlorodicyano*-, *di-chlorodicyano*-, and *dicyano*- (THIELE and GÜNTHER), 1906, A., i, 748.
- tribromohydroxy*- (JACKSON and FLINT), 1908, A., i, 191.
- bromotri-iodo*- (TORREY and HUNTER), 1912, A., i, 475.
- dibromodiiodo*-, and its reactions (TORREY and HUNTER), 1905, A., i, 217.

- p*-Benzoquinone, tri- and tetra-chloro-, formation of, from 2:4:6-trichlorophenol (LÉGER), 1908, A., i, 335.
- tetrachloro- (chloroanil), preparation of (WITT and TOECHE-MITTLER), 1904, A., i, 174.
- preparation and purification of (BOUVEAULI), 1908, A., i, 190.
- 2:5-dicyano-3:6-dihydroxy-, and its ammonium and silver salts (RICHTER), 1912, A., i, 34.
- hydroxy- (WILLSTÄTTER and MÜLLER), 1911, A., i, 729.
- dihydroxy-, colour reaction of (PIÑERUA ÁLVAREZ), 1907, A., ii, 143.
- tetraiodo- (iodoanil), and its derivatives (TORREY and HUNTER), 1912, A., i, 475.
- 3:6-dinitro-2:5-dihydroxy- (nitranilic acid), preparation of (NIETZKI), 1911, A., i, 69.
- o*-Benzoquinones (WILLSTÄTTER and MÜLLER), 1911, A., i, 728.
- p*-Benzoquinone-2-acetic acid (MÖRNER), 1912, A., i, 459.
- p*-Benzoquinone-2-acetic acid, 4-imino-, and its ammonium salt (MÖRNER), 1911, A., i, 56.
- p*-Benzoquinone-2:5-diaminobenzoic acid, methyl ester of (SIEGMUND), 1910, A., i, 749.
- Benzoquinoneanil, bromo-derivatives (SMITH and ORTON), 1908, T., 318 ; P., 27.
- p*-Benzoquinone-*p*-anisyl-di- and -mono-imines (WILLSTÄTTER and KUBLI), 1909, A., i, 977.
- p*-Benzoquinoneazine and its quinhydrone (WILLSTÄTTER and BENZ), 1906, A., i, 997.
- Benzoquinonebenzoylphenylhydrazone, chloro- (McPHERSON and DUBOIS), 1908, A., i, 462.
- p*-Benzoquinonebisdiazo-anhydride and its reactions, and -sulphonic acid, sodium salt (HENLE), 1907, A., i, 161.
- p*-Benzoquinonebis triazen, 3:6-dihydroxy-, and its decomposition (HENLE), 1907, A., i, 162.
- p*-Benzoquinonechloroimide, 2:6-dibromo- (TARUGI and LENCI), 1912, A., ii, 397.
- Benzoquinone-*p*-chlorophenylimine, 2:3:5-trichloro- (JACOBSON, BARTSCH, and STEINBRECK), 1909, A., i, 682.
- o*-Benzoquinonediazide, 3-mono- and tri-bromo- (ORTON), 1903, T., 811 ; P., 162.
- 3:5-dibromo- and -dichloro- (ORTON), 1903, A., i, 297 ; (HANTZSCH), 1903, A., i, 665.
- p*-Benzoquinonediazide, 2:3:5-trinitro-, and dinitrohydroxy- and its sodium derivative (MELDOLA and HAY), 1909, T., 1383 ; P., 208.
- o*-Benzoquinonediazides, action of hydroxylamine on (ORTON, EVANS, and MORGAN), 1907, P., 167.
- p*-Benzoquinonedicarboxylic acid, anhydride and imide of (THIELE and GÜNTHER), 1906, A., i, 745.
- Benzoquinonedicyanophenylhydrazone (ROLLA), 1907, A., i, 876.
- p*-Benzoquinonedi-imide and its dihydrochloride (WILLSTÄTTER and MAYER), 1904, A., i, 511 ; (ERDMANN), 1904, A., i, 935.
- Benzoquinonedi-imines, polymerisation of (WILLSTÄTTER and KUBLI), 1909, A., i, 976.
- o*-Benzoquinonedi methylhemiacetal-catechol ether, hexachloro- (JACKSON and MACLAURIN), 1907, A., i, 856.
- p*-Benzoquinonedi-2- α -naphthaquinonyldi-imine (PUMMERER and BRASS), 1911, A., i, 655.
- o*-Benzoquinonedioxime, constitution and colour of derivatives of (HANTZSCH and GLOVER), 1907, A., i, 1055.
- metallic salts (HANTZSCH and GLOVER), 1907, A., i, 101.
- 1:4-Benzoquinonehydroxyphenylimide, 3:5-dibromo- (TARUGI and LENCI), 1912, A., ii, 397.
- p*-Benzoquinoneimide, amino-, salts of (KEHRMANN and PRAGER), 1906, A., i, 967.
- p*-Benzoquinone-methyl- and -phenyl-di-imines and their salts (WILLSTÄTTER and MOORE), 1907, A., i, 642.
- o*-Benzoquinonemethylhemiacetalc catechol ether, hexachloro-, and its acetyl derivatives (JACKSON and MACLAURIN), 1907, A., i, 856.
- p*-Benzoquinone- α -methylphenazine, reduction of (LEICESTER), 1906, P., 41.
- p*-Benzoquinone-mono- and -di-methyl-imines (WILLSTÄTTER and PFANNENSTIEL), 1905, A., i, 669.
- p*-Benzoquinonemonosemicarbazones, so-called, constitution of (BORSCHÉ and ZELLER), 1904, A., i, 1056.
- p*-Benzoquinone-2':4'-dinitrophenylimide, tetrachloro- (REVERDIN and DELÉTRA), 1904, A., i, 531.
- o*-Benzoquinoneoxime, 4-chloro-6-nitro-3-hydroxy-, and 6-nitro-4-nitroso-amino-3-hydroxy- (HELLER and SOURLIS), 1910, A., i, 749.
- p*-Benzoquinoneoxime (nitrosophenol) (SLUITER), 1906, A., i, 255.

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o-**Benzoquinoneoxime 4-azo- β -naphthol**, 6-nitro-3-hydroxy- (HELLER and SOURLIS), 1910, A., i, 750.

Benzoquinoneoximecarboxylic acid (HOUBEN and BRASSERT), 1908, A., i, 27; (HOUBEN, BRASSERT, ETINGER, and KELLNER), 1909, A., i, 645.

p-**Benzoquinoneoximehydrazones** and their acyl derivatives (BORSCHÉ), 1906, A., i, 319.

p-**Benzoquinoneoxime dinitrophenyl ether** (BADISCHE ANILIN- & SODA-FABRIK), 1904, A., i, 68.

p-**Benzoquinoneoxime 2:6-dinitrophenylhydrazones** (BORSCHÉ and RANTSCHÉFF), 1911, A., i, 331.

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p-**Benzoquinoneoximephenylsemicarbazones** (BORSCHÉ and KÜHL), 1906, A., i, 320.

p-**Benzoquinoneoxonium hydrosulphide** (RICHTER), 1911, A., i, 135.

Benzoquinonephenylcarbethoxyhydrazones (WILLSTÄTTER and VERAGUTH), 1907, A., i, 454.

p-**Benzoquinonephenyldi-imine** and hydrochloride (WILLSTÄTTER and KUBLI), 1909, A., i, 977.

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p-**Benzoquinonephenylimine**, 3:5-di- and tri-chloro-2':4'-dinitro- (REVERDIN and CRÉPIEUX), 1903, A., i, 857.

o-**Benzoquinonesulphonic acid**, phenylhydrazones of (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.

p-**Benzoquinonesulphonic acid** and its salts (SCHULTZ and STÄBLE), 1904, A., i, 597.

p-**Benzoquinone-5-sulphonic acid**, 2-nitro-3:6-dihydroxy-, and its salts (NITZKI and HUMANN), 1905, A., i, 217.

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Benzotetron-3-carboxylanilide. See Coumarin-3-carboxylanilide, 4-hydroxy-.

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Benzothiazole-2-propionic acid and its salts, methyl ester, anilide, and thioanilide (REISSERT and MORE), 1906, A., i, 827.

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1:2:3-**Benzotriazine**, 4-hydroxy- (REISSERT and GRUBE), 1909, A., i, 925.

1:2:3-**Benzotriazole** (*aziminobenzene*; *benzeneazimide*), formation of derivatives of (GRANDMOUGIN and GUIGAN), 1907, A., i, 1092.

1:2:3-**Benzotriazole**, 6-amino-1-hydroxy-, and its hydrochloride and acetyl derivatives, and 6-nitro-1-hydroxy-, and its metallic and amine salts, ethers, and acyl derivatives (CURTIUS and MAYER), 1908, A., i, 53.

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- 1:2:3-Benzotriazole**, 6-nitro-1-hydroxy- (CURTIUS), 1907, A., i, 970; (CURTIUS and MAYER), 1908, A., i, 53; (SPIEGEL), 1908, A., i, 363.
- Benzotriazoles**, preparation of (ELBS and KEIPER), 1903, A., i, 662.
- Benzotriazole 2-salicylic acid** (ELBS and KEIPER), 1903, A., i, 662; (GRANDMOUGIN and GUIBAN), 1907, A., i, 1092.
- Benzotrichloride**, pyrogenetic decomposition of, by the electric current (LÖB), 1903, A., i, 806.
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- Benzotrichloride**, *o*-chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 445.
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- Benzoxazole** and its compound with mercuric chloride (BAMBERGER), 1903, A., i, 634.
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- Benzisoxazoles** (BORSCHÉ), 1912, A., i, 652.
- Benzisoxazole-2-carboxylamide**, 5-nitro- (BORSCHÉ and OPPENHEIMER), 1912, A., i, 652.
- Benzisoxazole-2-carboxylic acid**, 5-nitro-, methyl and ethyl esters (BORSCHÉ), 1909, A., i, 385.
- Benzisoxazolone** (BAMBERGER and PYMAN), 1909, A., i, 574.
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- Benzoyl-**. See also Benz-, Benzo-, and under the parent Substance.
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- Benzoyl chloride**, 2:4:6-tribromo-, crystallography of (JAEGER), 1908, A., i, 988.
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- Benzoyl chloride**, *o*-cyano- (SCHOLL, NEUBERGER, TRITSCH, and POTSCHWAUSCHEG), 1912, A., i, 563.
- 2-iodo-4-nitro-** (WILGERODT and GARTNER), 1908, A., i, 877.
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- Benzoyl cyanide**, preparation of (WISLICENUS and SCHÄFER), 1909, A., i, 99.
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o- and *p*-chloro- and *p*-nitro- (ZIMMERMANN), 1903, A., i, 93.
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- Benzoyl isocyanochloride** (JOHNSON and MENGE), 1904, A., i, 949.
- Benzoyl iodide** and its relation towards simple ethers (KJNER), 1909, A., i, 715.
- Benzoyl nitrate**, preparation and reactions of (FRANCIS), 1905, P., 302; 1906, T., 1; 1907, A., i, 53.
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- Benzoyl peroxide**, colour test for (GOLODETZ), 1908, A., ii, 330.
- Benzoyl disulphide** (v. BRAUN and RUMPEL), 1903, A., i, 620.
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- 3:5-di-iodo-2-amino-** (WHEELER and JOHNS), 1910, A., i, 382.
- 4-Benzoylacenaphthene** (PERRIER), 1904, A., i, 804.
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- Benzoyl acetaldehyde**, ethyl and ethylene mercaptals (KELBER and SCHWARZ), 1912, A., i, 866.
- Benzoylacetamide** (ATKINSON, INGHAM, and THORPE), 1907, T., 591.
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- Benzoyl acetic acid**, behaviour of, in the animal body (FRIEDMANN), 1910, A., ii, 795; (DAKIN), 1911, A., ii, 419.
- Benzoyl acetic acid**, esters, preparation of, and nitroso-, methyl ester of (WAHL and YOSHISAKA), 1908, A., i, 647.

- Benzoylacetic acid, ethyl ester** (HOPE and PERKIN), 1909, T., 2042; P., 296.
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- Benzoylacetic acid, *o*-nitro-, and its ethyl ester, and its salts** (NEEDHAM and PERKIN), 1904, T., 148; P., 10.
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- Benzoylacetacetic acid, ethyl ester, condensation product of, with resorcinol** (BÜLOW), 1903, A., i, 272.
- Benzoylacetacetic acid, *o*-nitro-, ethyl ester** (NEEDHAM and PERKIN), 1904, T., 151; P., 10.
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- Benzoylacetomethylamide, formation of, from methylaminobenzoylacetomethylamide** (GUARESCHI), 1904, A., i, 891.
- Benzoylacetone, condensation of, with benzaldehyde** (KNOEVENAGEL and ERLER), 1903, A., i, 636.
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- Benzoylacetone, *m*-hydroxyanilide and its semicarbazone** (BÜLOW and ISLER), 1903, A., i, 718.
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- Benzoylacetone, 3:5-dinitro-** (BEREND and HEYMANN), 1904, A., i, 670.
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- Benzoylacetoneamine and its compound with benzylidenebenzoylacetone** (KNOEVENAGEL, ERLER, and REINECKE), 1903, A., i, 652.
- Benzoylacetonebenzyl-*o*-carboxylic acid**, (BÜLOW and KOCH), 1904, A., i, 322.
- Benzoylacetonebenzylideneacetoacetic acid, ethyl ester** (KNOEVENAGEL and ERLER), 1903, A., i, 637.
- Benzoylacetone-*p*-nitrophenylhydrazone, 3-isonitroso-** (SACHS and ALSLEBEN), 1907, A., i, 359.
- Benzoylacetoneitrile** (MOUREU and LAZENNEC), 1907, A., i, 398.
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- Benzoylacetonylacetic acid, ethyl ester, synthetical experiments with** (BORSCHÉ and FELS), 1906, A., i, 509.
- α -Benzoylacetophenoneoxime.** See Dibenzoylmethaneoxime.
- Benzoylacetyl.** See Phenyl methyl diketone.
- Benzoylacetylacetanilide** (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 136.
- Benzoylacetylacetone and the action of phenylhydrazine on** (RUHEMANN), 1908, T., 1283; P., 178.
- Benzoylacetylcarbamide** (BILLETTER), 1903, A., i, 800.
- γ -Benzoyl- α -acetyl- $\beta\gamma$ -diphenylbutyric acid, ethyl ester, transformation of, into a cyclic keto-alcohol** (RABE and EHRENSTEIN), 1908, A., i, 553.
- 4-Benzoyl-2-acetyl-1:3-diphenyl-5-cyclohexenone, and its 5-oxime** (KNOEVENAGEL and ERLER), 1903, A., i, 637.
- s*-Benzoylacetylhydrazide, sodium and mercury salts** (STOLLÉ, MAMPFEL, HOLZAPFEL, and LÉVERKUS), 1912, A., i, 226.
- Benzoylacetylmethylcarbinol, bromo-, and dibromo-** (DIELS and STEPHAN), 1909, A., i, 473.
- β -Benzoyl- β -acetyl- α -methyl- and -ethylpropionic acids, ethyl esters, and their pyrazole compounds** (GARNER, REDDICK, and FINK), 1909, A., i, 552.
- 5-Benzoyl-3-acetyl-4-methylpyrazole** (WOLFF, BOOK, LORENTZ, and TRAPPE), 1903, A., i, 210.

- α -Benzoyl- γ -acetyl- β -phenylbutyric acid**, ethyl ester (DIECKMANN and v. FISCHER), 1911, A., i, 451.
- β -Benzoyl- β -acetylpropionic acid**, ethyl ester, and its phenylhydrazone and pyrazole derivative (GARNER, REDDICK, and FINK), 1909, A., i, 552.
- Benzoylacrylic acid** (BOUGAULT), 1909, A., i, 487.
- preparation of (BOUGAULT), 1908, A., i, 179, 269.
- and its oxime and semicarbazone (BOUGAULT), 1909, A., i, 102.
- and its methyl ester and phenylhydrazone and Pechmann's dye from (KOZNIEMSKI and MARCHLEWSKI), 1906, A., i, 759.
- fixation of acetophenone by (BOUGAULT), 1908, A., i, 796.
- fixation of hydrogen cyanide by (BOUGAULT), 1908, A., i, 422.
- Benzoylacrylic benzoic, benzoylpropionic, cinnamic, and phenylacetic anhydrides** (BOUGAULT), 1908, A., i, 791.
- Benzoylagaricic acid**, methyl ester (THOMS and VOGELSANG), 1908, A., i, 4.
- Benzoylalanine**, resolution of, and the brucine and strychnine salts of its active forms (POPE and GIBSON), 1912, T., 939; P., 126.
- lactimone of (MOHR and STROSCHN), 1909, A., i, 581.
- methyl ester (MAX), 1909, A., i, 926.
- γ -Benzoylalanine**, lactone of, and its use in synthesis of benzoylated dipeptides (MOHR and STROSCHN), 1910, A., i, 483.
- Benzoyl- β -alanine** and its silver salt (HOLM), 1905, A., i, 29.
- Benzoylalanineazide**, compounds of, with alanine and glycine (CURTIUS and VAN DER LINDEN), 1904, A., i, 883.
- Benzoylalaninyl chloride** (MOHR and STROSCHN), 1909, A., i, 581.
- Benzoylalaninyl- α -aminoisobutyric acid** and its lactimone (MOHR and STROSCHN), 1909, A., i, 581.
- and its amide and lactone (MOHR and STROSCHN), 1910, A., i, 483.
- Benzoylalkylamino-alcohols**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 167.
- 1-Benzoyl-1-allylcyclopropane** (HALLER and BENOIST), 1912, A., i, 570.
- Benzoylisoamarine** (BUSCH and LEEFHELM), 1908, A., i, 153.
- Benzoylamino-**. See under the parent Substance.
- Benzoylamylamine**, ϵ -chloro-, new derivatives of (v. BRAUN), 1909, A., i, 398.
- methoxy- and ethoxy-derivatives (v. BRAUN), 1909, A., i, 398.
- α -Benzoyl- γ -anilino- β -diphenylpropane, γ -cyano-** (CLARKE and LAPWORTH), 1907, T., 704; P., 90.
- 5-Benzoylanilino-1-*o*-nitrophenyl-3-methylpyrazole** (MICHAELIS, GRAFF, GESING, and BOIE), 1911, A., i, 235.
- 5-Benzoylanilino-1-phenyl-3-methylpyrazole** (MICHAELIS and HEPNER), 1905, A., i, 480.
- 4-Benzoyl-1-anilino-2'-thiophenol, 2:6-dinitro-** (ULLMANN and WOSNESSENSKY), 1909, A., i, 475.
- 4-Benzoylanilopyrrole** and its phenylhydrazone and methiodide and **4-Benzoyl- ψ -anilopyrrole** (MICHAELIS and ENGELHARDT), 1908, A., i, 919.
- Benzoylanisanilide**. See Benzanisanilide.
- Benzoyl-*p*-anisidine**. See Benz-*p*-anisidide.
- Benzoylanthesterol** (KLOBB), 1903, A., i, 165.
- Benzoylanthranil**, constitution of (MUMM and HESSE), 1910, A., i, 770; (HELLER), 1911, A., i, 81.
- Benzoylanthranil, *m*- and *p*-nitro-** (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.
- Benzoylanthranilic acid**, brucine and cinchonine salts, and their optical activity (HILDITCH), 1908, T., 1391; P., 186.
- Benzoylanthranilic acid, *o*-amino- (*anthranoylanthranilic acid*)**, and its methyl ester (MEYER), 1907, A., i, 317.
- derivatives of (SCHROETER), 1907, A., i, 529, 620.
- N*-acetyl derivative of (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 57.
- metallic salts of (MOHR, KÖHLER, and ULRICH), 1909, A., i, 650.
- acetylation of, and its lactimone and amide of the acetyl derivative (MOHR and KÖHLER), 1907, A., i, 414.
- acetyl derivative, lactone and amide of (MOHR and KÖHLER), 1910, A., i, 116.
- o*-hydroxy-, and its acetoxyanhydride (MEYER), 1907, A., i, 317.
- m*- and *p*-nitro- (BOGERT, GORTNER, and AMEND), 1911, A., i, 580.

- Benzoylanthranilic acids**, *o*-amino-, and their *O*-anhydrides (SCHROETER and EISLEB), 1909, A., i, 576.
- Benzoylanthranilic-*O*-anhydride**, *o*-nitro- (SCHROETER and EISLEB), 1909, A., i, 577.
- Benzoylanthranoylanthranilic acid**, *o*-nitro- (MEYER), 1907, A., i, 317.
- Benzoylanthraquinone-1-thiol** (SEER and WEITZENBÖCK), 1910, A., i, 571.
- Benzoyl-2-anthraquinonylimide** chloride and its condensation product with 2-aminoanthraquinone (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 996.
- 4-Benzoylantipyrine** and its oxime and hydrazones (MICHAELIS and ENGELHARDT), 1908, A., i, 918.
- Benzoylasparagine** (PAULY and WEIR), 1910, A., i, 256.
- Benzoylaspartic acid**, methyl and ethyl esters, diamide, and chloride (MAX), 1909, A., i, 926.
methyl hydrogen and dimethyl esters and derivatives (PAULY and WEIR), 1910, A., i, 256.
- Benzoylation**, anomalous products of (HELLER and TISCHNER), 1910, A., i, 770.
rule in, of aromatic hydroxy-acids and their esters (LASSAR-COHN and LÖWENSTEIN), 1908, A., i, 984.
of aminohydroxy- and diamino-acids (SÖRENSEN and ANDERSEN), 1908, A., i, 651.
- 4-Benzoylaziminole-5-carboxylic acid** (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- Benzoylazoacetyl** (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
- Benzoylazobenzene** (PONZIO and CHARRIER), 1909, A., i, 443.
- Benzoylazobenzene**, *o*-, *m*-, and *p*-nitro- (GASTALDI), 1911, A., i, 1047.
- Benzoylazo-*p*-bromobenzene**, *o*-, *m*-, and *p*-nitro- (GASTALDI), 1911, A., i, 1047.
- Benzoylazo-*p*-chlorobenzene** (PONZIO and CHARRIER), 1909, A., i, 444.
- Benzoylazo-2:4-dichlorobenzene** (PONZIO), 1909, A., i, 681.
- Benzoylazo-4-hydroxy-benzene**, -3-methylbenzene, and -2-methyl-5-isopropylbenzene, and -naphthalene, and their bromo-derivatives (BORSCHKE and OCKINGA), 1905, A., i, 719.
- 2-Benzoylazo-1-hydroxynaphthalene** (BORSCHKE and OCKINGA), 1905, A., i, 720.
- Benzoylazoimide** (*benzazide*) (THODE), 1904, A., i, 348.
- Benzoylazoimide**, 3:5-dinitro- and 3-nitro-5-hydroxy- (CURTIUS and RIEDEL), 1907, A., i, 970.
- Benzoylazo-*p*-toluene** (PONZIO and CHARRIER), 1909, A., i, 444.
- Benzoylbenzanilide**, *p*-bromo- and *m*-nitro- (WHEELER and JOHNSON), 1903 A., i, 693.
- p*-Benzoylbenzenediazoniumazide** (HANTZSCH), 1903, A., i, 664.
- Benzoylbenzenesulphonylanthranilic acid**, *o*-nitro-, ethyl ester (SCHROETER and EISLEB), 1909, A., i, 578.
- o*-Benzoylbenzoic acid** and its isomeric methyl esters (MEYER), 1904, A., i, 747.
and its esters, amide, and chloride (MEYER), 1905, A., i, 133.
 ψ -anisidide and anisidide of (MEYER and TURNAU), 1909, A., i, 710.
4'-disulphide (BADISCHE ANILIN- and SODA-FABRIK), 1912, A., i, 876.
reduction products of the anhydroxime of (ROSE), 1911, A., i, 372.
- o*-Benzoylbenzoic acid**, *m*-amino-, *p*-chloro-*m*-amino-, *p*-chloro-*m*-nitro-, *m*-hydroxy-, and *m*-nitro- (BASLER CHEMISCHE FABRIK), 1904, A., i, 512.
4-amino-, 4-hydroxy-, and 4-nitro- (KIEGL), 1905, A., i, 187.
5-amino-, and its silver salt, and 5-nitro-, and its esters, silver salt, and chloride (RAINER), 1908, A., i, 648.
p-bromo- (KÖHLER, HERITAGE, and BURNLEY), 1910, A., i, 563.
bromo- and bromonitro-derivatives (KUNCKELL and KNIGGE), 1906, A., i, 180.
3:6-, and 4:5-dichloro- (ULLMANN and BILLIG), 1911, A., i, 490.
tetrachloro- and *p*-hydroxy-, isomeric methyl esters of (MEYER), 1905, A., i, 134.
3:5-dichloro-2:4-dihydroxy- (METTLER), 1912, A., i, 359.
2:4-dihydroxy-, diacetyl derivative (v. LIEBIG), 1912, A., i, 380.
4-nitro-, its methyl esters and chloride, and dinitro-derivative (LANG), 1905, A., i, 895.
4- and 5-nitro-derivatives (RAINER), 1908, A., i, 539, 647.
- 4-Benzoylbenzoic acid**, *p*-bromo- (ULLMANN and SONE), 1911, A., i, 468.
2'-nitro- (KIEGL), 1908, A., i, 550.
- Benzoylbenzoic acids**, action of aniline on (MEYER), 1908, A., i, 25.
- p*-Benzoylbenzophenone** (DELACRE), 1909, A., i, 807.

- 2-Benzoylbenzisoxazole**, 5-nitro- (BORSCHÉ and OPPENHEIMER), 1912, A., i, 653.
- 2-Benzoylbenzisoxazolone** (BAMBERGER and PYMAN), 1909, A., i, 574.
- Benzoylbenzylaminocarboxylic acid** (EINHORN), 1905, A., i, 345.
- Benzoylbenzylidenecetic acid** and its sodium salt (RUHEMANN), 1909, T., 116.
- 1-Benzoyl-4-benzylidenehydantoin**, 2-thio- (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1031.
- Benzoylbenzylidenehydrazide chloride** (STOLLÉ), 1912, A., i, 504.
- 3-Benzoyl-1-benzyl-2-methylpyrrolidone** and its oxime (KÜHLING and FRANK), 1909, A., i, 955.
- 1-Benzoyl-1-benzylcyclopropane** (HALLER and BENOIST), 1912, A., i, 570.
- β -Benzoyl- α -benzylpropionic acid** (KÖHLER), 1905, A., i, 359.
- Benzoylbenzyl- ψ -thiocarbamide** (WHEELER and BEARDSLEY), 1903, A., i, 293.
- Benzoyl-*p*-bromoanilino-furazan** (BÖESEKEN and COUVERT), 1910, A., i, 644.
- Benzoyl-*p*-bromoanilino- α -furodiazole** (BÖESEKEN and COUVERT), 1910, A., i, 644.
- Benzoyl-*p*-bromobenzylidenehydrazine**, *p*-bromo- (CURTIUS, MELSBACH, and RISSOM), 1910, A., i, 509.
- Benzoyl-*p*-bromophenylhydrazine**, *o*-, *m*-, and *p*-nitro- (GASTALDI), 1911, A., i, 1047.
- α -nitro- β -nitroso-, and β -nitroso-, and its metallic derivatives (PONZIO), 1909, A., i, 338.
- O*- and *N*-Benzoyl-5-bromosalicylamide** (HUGHES and TITHERLEY), 1911, T., 28.
- γ -Benzoyl- Δ^2 -buten- β -ol** (DIECKMANN), 1912, A., i, 868.
- Benzoylbutylamide**, δ -chloro- and δ -iodo- (v. BRAUN and BESCHKE), 1907, A., i, 80.
- α -Benzoylbutyric acid** (HOPE and PERKIN), 1909, T., 2047.
- α -Benzoylisobutyric acid**, ethyl ester (BLAISE and COURTOT), 1906, A., i, 795; (HOPE and PERKIN), 1909, T., 2046.
- and its oxime (HALLER and BAUER), 1911, A., i, 300.
- γ -Benzoyl- α -isobutyryl- β -phenylbutyric acid**, ethyl ester (DIECKMANN and KRON), 1908, A., i, 389.
- α -Benzoyl- γ -iso-, and -*tert*-.butyryl- β -phenylbutyric acids**, ethyl esters (DIECKMANN and v. FISCHER), 1911, A., i, 452.
- Benzoylcamphidine** and its chlorinated amide (v. BRAUN), 1909, A., i, 398.
- Benzoylcampholic acid** and its esters and their semicarbazones (HALLER and WEIMANN), 1907, A., i, 278.
- Benzoylcamphor**, constitution of enolic, and its methyl and benzyl ethers (FORSTER), 1903, T., 98.
- Benzoylcamphorcarboxylic acid**, ethyl ester (BRÜHL), 1903, A., i, 65.
- Benzoylcarbamic acid**, halogen substituted propyl and isopropyl esters of (JOHNSON and GUEST), 1910, A., i, 886.
- hydroxyethyl ester (BILLETER), 1903, A., i, 821.
- Benzoylcarbamide**, *o*-amino- (DIELS and WAGNER), 1912, A., i, 512.
- p*-bromo- (JOHNSON and JAMIESON), 1906, A., i, 352.
- Benzoylcarbimide** (BILLETER), 1903, A., i, 484, 821.
- Benzoylcarbinol** and its reactions (KLING), 1905, A., i, 732.
- behaviour of, towards alkalis and oxidising agents (EVANS), 1906, A., i, 269.
- Benzoylcarbinol**, *p*-chloro- (STRAUS), 1912, A., i, 993.
- m*-nitro-, and its oxidation (EVANS and BROOKS), 1908, A., i, 338.
- Benzoylcarbohydrazide** (DIELS and OKADA), 1912, A., i, 918.
- Benzoylcarbylamine**, action of alkyl-oxides and amines on (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Benzoylcarthamine** (KAMETAKA and PERKIN), 1910, T., 1421; P., 181.
- d*-Benzoylcarvoxime** (DEUSSEN and HAHN), 1909, A., i, 502.
- l*- and *d*- α -Benzoylcarvoximes**, tetra-bromo- (DEUSSEN and HAHN), 1910, A., i, 273.
- Benzoylchloroamide**, reactions of (MOHR), 1905, A., i, 891; 1906, A., i, 357.
- Benzoylchloroamide**, *m*-nitro- (STIEGLITZ and EARLE), 1904, A., i, 39.
- Benzoyl-*m*-chlorobenzylidenehydrazine**, *m*-chloro- (CURTIUS, MELSBACH, and RISSOM), 1910, A., i, 509.
- Benzoylchlorocarbamide** (CHATTAWAY and WÜNSCH), 1909, T., 130.
- Benzoyl-*m*-chlorophenylalanine** (FLATOW), 1910, A., i, 321.
- s*-Benzoyl-*p*-chlorophenylcarbamide** (STIEGLITZ and EARLE), 1904, A., i, 40.
- α -Benzoyl- β -*p*-chlorophenylhydrazine** (PONZIO and CHARRIER), 1909, A., i, 444.

- α -Benzoyl- β -2:4-dichlorophenylhydrazine** (PONZIO, 1909, A., i, 681.
- O*- and *N*-Benzoyl-5-chlorosalicylamide** (TITHERLEY and HUGHES), 1910, T., 1380; P., 175.
- 6-Benzoylchroman** (v. KOSTANECKI, LAMPE, and MARSCHALK), 1907, A., i, 951.
- α -Benzoyl- γ -cinnamoyl- β -phenylbutyric acid, ethyl ester, and its dibromide** (BORSCHKE), 1910, A., i, 683.
- Benzoyl- ψ -codeine hydrochloride and methiodide** (KNÖRR, BUTLER, and HÖRLEIN), 1909, A., i, 827.
- 4-Benzoylcoumaran and its leuco-derivative** (v. KOSTANECKI, LAMPE, and MARSCHALK), 1907, A., i, 951.
- Benzoylcoumarin and its oxime** (KNOEVENAGEL and ARNOT), 1905, A., i, 65.
- 1-Benzoylcoumarone, *p*-hydroxy-, and its acetate** (ZWAYER and v. KOSTANECKI), 1903, A., i, 444.
- Benzoylcreatinine** (URANO), 1907, A., i, 192.
- α - and β -Benzoylerotonic acid, β -amino-, ethyl esters, and imide chloride derivatives** (BENARY), 1909, A., i, 890.
- Benzoyl- ψ -cumidylguanidine** (PIERON), 1911, A., i, 166.
- Benzoylcumylglycollonitrile** (FRANCIS and DAVIS), 1909, T., 1406.
- s*-Benzoyl- ψ -cumylhydrazide** (WILLGERODT and HERZOG), 1905, A., i, 550.
- Benzoylcyanamide, preparation and derivatives of** (DIELS and WAGNER), 1912, A., i, 511.
mercuric salt (AULD), 1907, T., 1048; P., 152.
- Benzoyldehydracetic acid, action of amines on, and its methyl- and phenyl-lactams** (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1912, A., i, 128.
action of ammonia on, and formation of its lactam (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1911, A., i, 1020.
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- 5-Benzoyl-3:4-diacylgallic acid** (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- Benzoyldiamines, nitro-, production of aromatic, and their azo-derivatives** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 606.
- Benzoyldianilinostilbene and its salts and compounds with phenols** (EVEREST and McCOMBIE), 1911, T., 1758.
- Benzoyldianthranoylanthranilic acid, *o*-nitro-** (MEYER), 1907, A., i, 317.
- Benzoyldibenzylamine** (FRANZEN), 1909, A., i, 575.
- Benzoyldisobutylcarbamide** (McKEE), 1909, A., i, 635.
- β -Benzoyldi-butylin, -chlorohydrin and -stearin** (GUTH), 1903, A., i, 227.
- Benzoyldi- α -ethylbutyrylhydrazide** (STOLLÉ, MAMPEL, HOLZAPPEL, and LEVERKUS), 1912, A., i, 227.
- Benzoyldiethylmalonamic acid** (FREUND and FLEISCHER), 1911, A., i, 236.
- Benzoyldiglycinimide** (BERGELL and FEIGL), 1908, A., i, 140.
- Benzoyldiglycylaminoacetic acid and its benzylidenehydrazide and azoimide** (CURTIUS and LEVY), 1904, A., i, 834.
- Benzoyldihydro-mesobenzdianthrone, di-*p*-bromo-** (SCHOLL, MANSFELD, and POTTSCHWAUSCHEG), 1910, A., i, 495.
- β -Benzoyldihydrocarvone, formation of, and its cyanohydrin, dioxime, semicarbazone, and isomeride** (CLARKE and LAPWORTH), 1907, T., 701; P., 90.
- Benzoyldihydroflavanthren, *p*-bromo-** (POTTSCHWAUSCHEG), 1910, A., i, 517.
- N*-Benzoyl-1:2-dihydropapaverine** (PYMAN), 1909, T., 1622.
- 1-Benzoyl-1:2-dihydroquinoline** (BENRATH), 1906, A., i, 535.
- 1-Benzoyl-1:2-dihydroquinoline, 2-cyano- and 2-hydroxy-** (REISSERT), 1905, A., i, 472.
- 2-Benzoyl-1:2-dihydroisoquinoline, 1-cyano-** (REISSERT), 1905, A., i, 926.
- 2-Benzoyl-3:4-dimethoxybenzoic acid** (FALTIS), 1910, A., i, 698.
- 1-Benzoyl-2:6-dimethyltetrahydroquinoline, 8-bromo-** (GARROD, JONES, and EVANS), 1912, T., 1392.
- Benzoyldioxindole** (HELLER and MAYER), 1906, A., i, 585.
- 2'-Benzoyldiphenyl sulphide, 2:4-dinitro-** (MAYER), 1910, A., i, 262.
- Benzoyldiphenylamide, 3:5-dinitro-** (JOHNSON, MEADE, and CHALKER), 1906, A., i, 853.
- Benzoyldiphenylamine** (JOHNSON and LEVY), 1907, A., i, 910.
- 4-Benzoyldiphenylamine, 2:6-dinitro-, and 2:6-dinitro-2'-hydroxy-** (ULLMAN and WOBNESSENSKY), 1909, A., i, 475.
- 5-Benzoyl-1:3-diphenylbarbituric acid, 5-bromo-, preparation of, and the estimation of bromine in** (WHITELEY), 1908, P., 288.
- Benzoyldiphenylbromomethane** (WEBNER and GERHARDT), 1906, A., i, 436.

- γ -Benzoyl- $\alpha\beta$ -diphenylbutyric acid** and its ethyl ester (BORSCHÉ), 1910, A., i, 35.
- γ -Benzoyl- $\beta\gamma$ -diphenylbutyrolactone** (GARNER), 1905, A., i, 144.
- Benzoyldiphenylcarbinol**, methyl and ethyl esters of (WERNER and GERHARDT), 1906, A., i, 436.
- Benzoyldiphenyldihydropyrimidone** (RUHEMANN), 1903, T., 722; P., 128.
- β -Benzoyl- $\alpha\gamma$ -diphenyl- $\alpha\gamma$ -dimethylguanidine** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Benzoyldiphenylene-bromomethane- and -carbinol**, methyl ether of (WERNER and SCHÖLER), 1906, A., i, 436.
- β -Benzoyl- α -diphenylethylhydrazine** (BUSCH and FLEISCHMANN), 1910, A., i, 282.
- Benzoyl- $\alpha\gamma$ -diphenylguanidine** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- p -Benzoyldiphenylmethane** (DELACRE), 1909, A., i, 807.
- Benzoyldiphenylmethylthiocarbamide** (DIXON and TAYLOR), 1912, T., 2522.
- β -Benzoyl- $\alpha\beta$ -diphenylpropionic acid** and its methyl ester (REIMER and REYNOLDS), 1908, A., i, 989.
- 3-Benzoyl-1:1-diphenyl-2-styryl-4-cyclobutanone** and its bromo-derivative (STAUDINGER and BUCHWITZ), 1910, A., i, 47.
- 2-Benzoyl-2:3-diphenyltetrahydrofuran**, 5-hydroxy-, and its acetyl derivative (GARNER), 1905, A., i, 144.
- Benzoyldiphenylthiocarbamide** (DIXON and TAYLOR), 1912, T., 2512.
- Benzoyl-*bb*-diphenylthiocarbamide** (DIXON and TAYLOR), 1908, T., 693; P., 74.
- N*-Benzoyldiphenylthiourazole** (BUSCH, REINHARDT, and LIMPACH), 1910, A., i, 142.
- β -Benzoyl- $\alpha\gamma$ -di-*o*-, *m*-, and *p*-tolylguanidines** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Benzoylenebenziminazole** (THIELE and FALK), 1906, A., i, 751.
and its salts, and amino-, and nitro- (RUPE and THIESS), 1910, A., i, 71.
- Benzoylenecarbamide**. See Tetrahydroquinazoline-2:4-dione.
- o*-Benzoylenedihydroquinazoline** and its salts (GABRIEL), 1912, A., i, 392.
- Benzoylenedimethylpyrrolidone** and its derivatives (GABRIEL), 1911, A., i, 228.
- Benzoylenedimethylpyrrolone** (GABRIEL), 1911, A., i, 228.
4-amino-, 4-bromo-, and 4-nitro-derivatives (GABRIEL), 1911, A., i, 228.
- Benzoylenedimethylpyrrolonecarb-oxylic acid**, ethyl ester (GABRIEL), 1911, A., i, 227.
- 2:3-Benzoylene-4:5-phthalyl-1-phenylpyrrole** (STADLER), 1903, A., i, 102.
- Benzoylenetetrahydroquinazoline** (GABRIEL), 1912, A., i, 393.
- o*-Benzolenetoliminazole** and its platinum chloride (THIELE and FALK), 1906, A., i, 752.
- β -Benzoylthanesulphonic acid** (KÖHLER), 1909, A., i, 939.
- Benzoylethyl-4-aminonaphthalene 1-diazonium salts** (MORGAN and COUZENS), 1910, T., 1694.
- α -Benzoyl- α -ethylbutyric acid**, ethyl ester, preparation of (HOPE and PERKIN), 1909, T., 2048.
- Benzoyl- ψ -ethylhydantoic acid** and thio-, and their ethyl esters (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1031.
- as*-Benzoylethyl-1:4-naphthylenediamine** and its diazo-derivatives (MORGAN and COUZENS), 1910, T., 1693; P., 165.
- Benzoylhexanthone** (ZERNER), 1910, A., i, 693.
- Benzoylfluorene** (PERRIER; GOLDSCHMIEDT), 1904, A., i, 66; (WERNER and SCHÖLER), 1906, A., i, 436.
- 2-Benzoylfluorene** (FORTNER), 1904, A., i, 729.
- 3-(or 4)-Benzoylfluorene** and its oxime and phenylhydrazones (FORTNER), 1903, A., i, 177.
- 3-(or 4)-Benzoylfluorenone** and its oximes and phenylhydrazones (FORTNER), 1903, A., i, 177.
- Benzoylformaldehyde**, refraction of (SMEDLEY), 1909, T., 218; P., 17.
behaviour of, towards oxidising agents (EVANS), 1906, A., i, 270.
- Benzoylformaldehyde**, *m*-nitro-, oxidation of (EVANS and WITZEMANN), 1911, A., i, 987.
- Benzoylformamidoxime** (DIELS and PILLOW), 1908, A., i, 535.
- Benzoylformic acid**. See Phenylglyoxylic acid.
- Benzoylfurylalanine** (FLATOW), 1910, A., ii, 322.
- Benzoylglycine**, *m*-nitro-, ethyl ester (FRANZEN), 1909, A., i, 575.
- Benzoylglycolylaminoacetic acid**, ethyl ester (CURTIUS and DARAPSKY), 1906, A., i, 403.
- Benzoylglycolylglycylglycine**, ethyl ester (CURTIUS and THOMPSON), 1906, A., i, 404.

- Benzoylglucuronic acid** in sheep's urine after ingestion of benzoic acid (MAGNUS-LEVY), 1907, A., ii, 979.
- Benzoylglucylaminoacetanilide** (CURTIUS and WÜSTENFELD), 1904, A., i, 833.
- Benzoylglucylaminoacetylbenzylidenehydrazide** (CURTIUS and WÜSTENFELD), 1904, A., i, 833.
- Benzoylglucyloxylic acid**, isobutyl, methyl and propyl esters (WAHL and DOLL), 1912, A., i, 626.
- ethyl ester, and its oxime (WAHL), 1907, A., i, 217.
- $\alpha\beta$ -dimethylaminoanil of (SACHS, WOLFF, and KRAFT), 1903, A., i, 793.
- reactions of (WAHL), 1907, A., i, 362.
- Benzoyl group**, introduction of, into tertiary cyclic bases (REISSERT), 1905, A., i, 472, 925.
- direct estimation of (MEYER and HARTMANN), 1906, A., ii, 58.
- 1-Benzoylguaiacol**, 5-bromo-, and 3-chloro- (JONA), 1912, A., i, 760.
- Benzoylguaiacol-5-sulphonic acid**, potassium salt (HOFFMANN, LA ROCHE & Co.), 1909, A., i, 789.
- Benzoylguanidine**, and *m*-nitro- (TRAUBE), 1911, A., i, 115.
- benzoate (WIELAND and BAUER), 1907, A., i, 492.
- β -Benzoyl- α - Δ^1 -cyclohexenepropionic acid**, α -cyano-, ethyl ester (HARDING, HAWORTH, and PERKIN), 1908, T., 1958.
- γ -Benzoylhexoic acid**, ethyl ester, and its *p*-nitrophenylhydrazone (HALLER and BAUER), 1911, A., i, 727.
- Benzoylhexylglycylaminoacetic acid** (CURTIUS and LEVY), 1904, A., i, 834.
- Benzoylhippurylhydrazide**. See Glycine hydrazide, dibenzoyl derivative.
- Benzoylhistidine**, *p*-nitro- (PAULY), 1910, A., i, 336.
- Benzoylhomopiperonylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 1015.
- Benzoylhordenine methiodide** (BARGER), 1909, T., 2197.
- Benzoylhydantoic acid** and thio-, and its ethyl ester (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1031.
- Benzoylhydantoic acid**, 3:5-dibromo-4-hydroxy- (JOHNSON and HOFFMAN), 1912, A., i, 136.
- 3-Benzoylhydantoin**, 2-thio- (JOHNSON and O'BRIEN), 1912, A., i, 806.
- Benzoylhydrazine**. See Benzohydrazide.
- Benzoylhydrazobenzene** (BIEHRINGER and BUSCH), 1903, A., i, 296; (RASSOW and BAUMANN), 1910, A., i, 79.
- nitroso-, reduction of (NOMBLOT), 1910, A., i, 206.
- Benzoyl-*o*-hydrazotoluene** (FREUNDLER), 1903, A., i, 663.
- Benzoylhydrazo-*p*-toluene** (BIEHRINGER and BUSCH), 1903, A., i, 296.
- dl*- and *l*-2-Benzoylhydrindamide, 1-hydroxy- (POPE and READ), 1912, T., 763.
- Benzoylhydrobromoquinine** and its salicylate (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), 1911, A., i, 559.
- Benzoylhydrocotarnineacetic acid** and its ethyl ester and silver salt (AHLERS), 1905, A., i, 786.
- Benzoylhydroquinine**, and *p*-amino-, and *p*-nitro- (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), 1912, A., i, 1013.
- Benzoyl-*o*-hydroxybenzylidenehydrazine**, *o*-hydroxy- (CURTIUS, MELS-BACH, and RISSOM), 1910, A., i, 509.
- N*-Benzoyl-*o*-hydroxydiphenylamine** (GAMBARJAN), 1909, A., i, 911.
- Benzoyl-*p*-hydroxyphenylethylamine** (BARGER and WALPOLE), 1909, T., 1722; P., 229.
- s*-Benzoyl-4-hydroxy-phenyl-3-methylphenyl-**, and **-2-methyl-5-isopropylphenyl-hydrazines** (BORSCHKE and OCKINGA), 1905, A., i, 720.
- Benzoyliminocarbonic acid**, diethyl and dimethyl esters (JOHNSON and CHERNOFF), 1912, A., i, 219.
- 2-Benzoylimino-3-phenylthiodiazoline** and its 5-ethoxy-derivative (WHEELER and STATIROPOULOS), 1905, A., i, 722.
- 4-Benzoyliminopyrine** (MICHAELIS and ENGELHARDT), 1908, A., i, 919.
- 1-Benzoylindole** (WEISSGERBER), 1911, A., i, 155.
- 3-Benzoylindole**, and its derivatives (ODDO and SESSA), 1911, A., i, 487.
- α' -Benzoyl- α -iodocamphor** (FORSTER and JENKINSON), 1903, T., 537.
- Benzoyl*di*-iodohistidine**, and *p*-nitro- (PAULY), 1910, A., i, 639.
- Benzoyl- α -isatinanilide** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 801.
- 1-Benzoylisatin-3-phenylhydrazone** (AUWERS and BOENNECKE), 1911, A., i, 588.
- Benzoyl-lactamide** (EINHORN), 1908, A., i, 611.

- Benzoyl-lactonitrile** (DAVIS), 1910, T., 950; P., 89.
- Benzoyl-lactonitrile, trichloro-** (FRANCIS and DAVIS), 1909, T., 1407.
- Benzoyl-leucine, methyl and ethyl esters, amide, and chloride of** (MAX), 1909, A., i, 926.
- ϵ -Benzoyl-leucine.** See Hexoic acid, ϵ -amino-, benzoyl derivative.
- Benzoylmalonanilic acid, ethyl ester** (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 136.
- dl*-Benzoylmandelic acid, *l*-menthyl ester** (MCKENZIE and HUMPHRIES), 1909, T., 1112.
- Benzoylmandelonitrile, and *p*-chloro-, and *m*-nitro-** (FRANCIS and DAVIS), 1909, T., 1404.
- Benzoylmenthone** (BÖDTKER), 1912, A., i, 278.
- 2-Benzoyl-3-methoxybenzoic acid, 4-hydroxy-** (FALTIS), 1910, A., i, 698.
- 6-Benzoylmethoxy-2-benzoylmethylthiol-4-methylpyrimidine** (JOHNSON and MORAN), 1912, A., i, 913.
- 5-Benzoyl-3-methoxydiphenyliodonium salts** (WILLGERODT and BURKHARD), 1912, A., i, 630.
- Benzoyl-*p*-methoxymandelonitrile, *m*-nitro-** (FRANCIS and DAVIS), 1909, T., 1408.
- Benzoyl-*o*- and -*p*-methoxymandelonitriles** (FRANCIS and DAVIS), 1909, T., 1405.
- ω -Benzoyl-*o*-methylaminoacetophenone** (KAUFMANN and PLÁ Y JANINI), 1911, A., i, 916.
- Benzoyl-methyl- and -ethyl-*p*-aminobenzenediazo- β -naphthol** (MORGAN and ALCOCK), 1909, T., 1325.
- Benzoyl-methyl- and -ethyl-*p*-aminobenzenediazonium molybdates** (MORGAN and ALCOCK), 1909, T., 1325.
- Benzoylmethylanilide, 3:5-dinitro-** (JOHNSON, MEADE, and CHALKER), 1906, A., i, 853.
- 4-Benzoyl-5-methylanilino-1-phenyl-3-methylpyrazole.** See 4-Benzoyl-4-anilopyrine.
- Benzoylmethylanthranilic acid, *o*-amino-(anthranoylmethylanthranilic acid), and its copper salt** (SCHROETER and EISLEB), 1909, A., i, 578.
- o*-nitro-, and its methyl ester** (SCHROETER and EISLEB), 1909, A., i, 578.
- 4-Benzoyl-5-methylaziminole and its silver salt** (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- α -Benzoyl- α -methylbutyric acid, ethyl ester** (HOPE and PERKIN), 1909, T., 2050.
- Benzoylmethyl-diisobutylisocarbamide and its hydrochloride** (MCKEE), 1909, A., i, 635.
- 1-Benzoyl-2-methylcoumarone, 4-amino-, and its acetyl derivative and the oxime of the acetyl compound** (KUNCKELL and KESSELER), 1903, A., i, 509.
- 1-Benzoyl-4-methylcoumarone, 2-hydroxy-, and its salts** (AUWERS), 1910, A., i, 630.
- 3-Benzoyl-4-methylene-1:4-benzopyranol-2-phenyl-*o*-carboxylic acid, 7-mono- and 5:7-dihydroxy- and their acetyl derivatives** (BÜLOW and KOCH), 1904, A., i, 610.
- 4:5-Benzoylmethylene-3:6-diphenyl-4:5-dihydropyridazine** (PAAL and SCHULZE), 1903, A., i, 710.
- Benzoylmethylglyoxime peroxide and *p*-nitro-** (HARRIES and TIETZ), 1904, A., i, 428.
- β -Benzoyl- α -1-methyl- Δ^3 -4-cyclohexene-propionic acid, ethyl ester** (HARDING, HAWORTH, and PERKIN), 1908, T., 1966.
- Benzoyl- ψ -methylhydantoic acid, ethyl ester** (WHEELER, NICOLET, and JOHNSON), 1911, A., i, 1031.
- β -Benzoyl- β -methylpentane** (HALLER and BAUER), 1911, A., i, 652.
- Benzoylmethylphenylcarbamic acids, 4:2- and 2:4-, esters** (CHATTAWAY and LEWIS), 1904, T., 593; P., 60.
- as*-Benzoyl-methyl- and -ethyl-*p*-phenylenediamine** (MORGAN and ALCOCK), 1909, T., 1322; P., 202.
- 1-Benzoyl-1-methylcyclopropane and its derivatives** (HALLER and BENOIST), 1912, A., i, 570.
- and its *p*-nitrophenylhydrazones** (BLAISE and HERMAN), 1911, A., i, 881.
- 1-Benzoyl-1-methyl-3-isopropylcyclopentane and its oxime** (BOUVEAULT and LEVALLOIS), 1909, A., i, 497.
- 5-Benzoyl-4-methylpyrazole-3-carboxylic acid and its ethyl ester and sodium salt** (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 209.
- 3-Benzoyl-2-methylquinoline and its oxime** (STARK and HOFFMANN), 1909, A., i, 255.
- Benzoylmethylthiodiazole and its mercurichloride and semicarbazones** (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- 2-Benzoylmethylthiol-4-methyl-1:6-dihydro-6-pyrimidone and its derivatives** (JOHNSON and MORAN), 1912, A., i, 913.

- 4-Benzoyl-5-methylthiol-1-phenyl-3-methylpyrazole** (MICHAELIS and LEHMANN), 1908, A., i, 691; (MICHAELIS and ENGELHARDT), 1908, A., i, 919.
- γ-Benzoyl-γ-methylvaleric acid**, and its ethyl ester and their oximes (HALLER and BAUER), 1911, A., i, 727.
- Benzoylmorphine**, *p*-hydroxy-, and its hydrochloride and methobromide (RIEDEL), 1910, A., i, 765.
- 4-Benzoylnaphthalene-1:8:2'-tricarboxylic acid**, and its anhydride, and imide (GRAEBE and PERUTZ), 1903, A., i, 409.
- β-Benzoylnaphthalic acid** (DZIEWOŃSKI and WECHSLER), 1904, A., i, 803. and its anhydride, imide, and oxime (DZIEWOŃSKI and DOTTA), 1904, A., i, 390.
- 4-Benzoylnaphthalic acid** and anhydride and oxime (GRAEBE and HAAS), 1903, A., i, 409.
- 2-Benzoyl-β-naphthaquinoline** (BORSCHKE), 1909, A., i, 957.
- 2-Benzoyl-β-naphthaquinoline-1-carboxylic acid** (BORSCHKE), 1909, A., i, 957.
- o-Benzoylnaphthoylbenzene** (GUYOT and VALLETTE), 1911, A., i, 654.
- Benzoyl-α-naphthylamine**, 3:5-dinitro- (JOHNSON, MEADE, and CHALKER), 1906, A., i, 853.
- Benzoyl-β-naphthylglycollonitrile** (FRANCIS and DAVIS), 1909, T., 1406.
- 2-Benzoylnicotinic acid** (KIRPAL), 1910, A., i, 505.
- 4-Benzoylnicotinic acid** and its hydrochloride (KIRPAL), 1909, A., i, 509.
- 3-Benzoylisonicotinic acid** (KIRPAL), 1909, A., i, 509.
- Benzoyl-2:5-dinitro-4-aminophenoxyacetic acid**, nitro- (REVERDIN and DE LUC), 1909, A., i, 914.
- Benzoyl-*m*-, and *p*-nitroanilines**, *m*- and *p*-nitro- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1910, A., i, 481.
- N*-Benzoyl-*p*-nitrobenzyl-*p*-aminophenol** (BAKUNIN and PROFILO), 1907, A., i, 912.
- Benzoyl-*o*-nitrobenzylidenehydrazine**, *o*-nitro- (CURTIUS, MELSBACH, and RISSOM), 1910, A., i, 509.
- Benzoyl-*m*-nitrobenzylidenehydrazine**, *m*-nitro- (CURTIUS, MELSBACH, and RISSOM), 1910, A., i, 509.
- Benzoyl-*p*-nitrobenzylidenehydrazine**, *p*-nitro- (CURTIUS, MELSBACH, and RISSOM), 1910, A., i, 509.
- αα-Benzoylnitrocamphors**, and their *m*-nitro-derivatives (FORSTER and JENKINSON), 1903, T., 537.
- Benzoyl-4-nitroethyl-α-naphthylamine** (MORGAN and COUZENS), 1910, T., 1693.
- Benzoyldinitrohydroxyanilinoacetic acid**, nitro- (REVERDIN and DE LUC), 1909, A., i, 914.
- Benzoyl-2:3-(or 2:6)dinitro-4-methylaminophenol**, nitro- (REVERDIN and DE LUC), 1909, A., i, 378.
- Benzoyl-*p*-nitrophenylethylamine** (BARGER and WALPOLE), 1909, T., 1721; P., 229.
- s*-Benzoyl-2:4-dinitrophenylhydrazide**. See *s*-Benzo-2:4-dinitrophenylhydrazide.
- Benzoylisonitrosocamphor** and its isomeride (FORSTER), 1903, T., 533; P., 97.
- Benzoyl-*p*-nitro-*o*-toluidine**, *m*- and *p*-nitro- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1910, A., i, 481.
- α-Benzoylornithine** (SÖRENSEN), 1910, A., i, 227.
- δ-Benzoylornithine** (FISCHER and ZEMPLÉN), 1909, A., i, 303.
- Benzoyloscine**, resolution of (TUTIN), 1910, T., 1793; P., 215.
- Benzoyl-*d*-oscine**, and its salts (TUTIN), 1910, T., 1796; P., 215.
- 3-Benzoyloxindone-2-carboxylic acid**, ethyl ester (HANTZSCH and GAJEWSKI), 1912, A., i, 871.
- Benzoyloxyacetamide**, *p*-nitro- (EINHORN and SEUFFERT), 1911, A., i, 45.
- Benzoyloxyacetic acid**, *p*-amino-, and *p*-nitro-, ethyl esters of (EINHORN and SEUFFERT), 1911, A., i, 45.
- p*-Benzoyloxyacetophenone**, ω-amino-, benzoyl derivative (TUTIN, CATON, and HANN), 1909, T., 2120.
- 4-Benzoyloxy-3-aldehydotriphenylacetic acid** (BISTRZYCKI and FELLMANN), 1911, A., i, 133.
- p*-Benzoyloxyanilinoacetic acid** (REVERDIN and DE LUC), 1909, A., i, 913.
- o*-Benzoyloxyazobenzene** (MCIPHERSON and LUCAS), 1909, A., i, 193.
- p*-Benzoyloxybenzaldehyde** and its derivatives (POPE), 1911, P., 73.
- o*-Benzoyloxybenzaldehydeacetylphenylhydrazone** (AUWERS and EISENLOHR), 1909, A., i, 917.
- o*-Benzoyloxybenzanilide** (PURGOTTI and MONTI), 1904, A., i, 586.
- 1-*p*-Benzoyloxybenzeneazo-2-naphthol** (CHARRIER and FERRERI), 1912, A., i, 813.
- p*-Benzoyloxybenzenediazoamino-*o*-toluene** (WOHL and GOLDENBERG), 1904, A., i, 209.

- Benzoyloxybenzene-*p*-sulphonic acid**, ethylester (LASSAR-COHN and LÖWENSTEIN), 1908, A., i, 985.
- o*-Benzoyloxybenzoic acid** (*benzoylsalicylic acid*) (HOFFMANN, LA ROCHE & Co.), 1906, A., i, 669.
- sodium salt (EINHORN, ROTHLAUF, and SEUFFERT), 1912, A., i, 32.
- brucine and cinchonine salts, and their optical activity (HILDITCH), 1908, T., 1391; P., 186.
- and its ethyl ester (LASSAR-COHN and LÖWENSTEIN), 1908, A., i, 985.
- methyl ester (*benzosalin*), therapeutic value of (VARANINI), 1908, A., ii, 520.
- phenyl ether (PURGOTTI and MONTI), 1904, A., i, 585.
- o*-Benzoyloxybenzoic acid**, *o*-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- 4-nitro-, and its ethyl ester and 4-amino-, ethyl ester of (EINHORN and v. BAGH), 1910, A., i, 259.
- 3-Benzoyloxybenzoic acid**, *p*-hydroxy- (FISCHER, FREUDENBERG, and LEPSIUS), 1911, A., i, 875.
- m*-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- 4-Benzoyloxybenzoic acid**, *m*-hydroxy- (FISCHER, FREUDENBERG, and LEPSIUS), 1911, A., i, 875.
- m*-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- o*-Benzoyloxybenzoic anhydride** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 984; (EINHORN), 1910, A., i, 741; (EINHORN and SEUFFERT), 1911, A., i, 54.
- p*-Benzoyloxybenzonitrile** (POPE), 1911, P., 74.
- o*-Benzoyloxybenzo-*o*-toluidide** (PURGOTTI and MONTI), 1904, A., i, 586.
- o*-Benzoyloxybenzoylcarbonic acid**, ethyl ester (EINHORN), 1910, A., i, 741.
- p*-Benzoyloxybenzoylmandelamide** (ALOY and RABAUT), 1912, A., i, 462.
- o*-Benzoyloxy-*o'*-benzoyloxybenzoic acid** (BOEHRINGER & SÖHNE), 1911, A., i, 987.
- o*-Benzoyloxybenzyl cyanide**. See *o*-Benzoyloxyphenylacetoneitrile.
- 2-Benzoyloxybenzylacetanilide**, and 3:5-*di*bromo- (AUWERS and EISENLOHR), 1909, A., i, 916.
- p*-Benzoyloxybenzylidene-*p*-nitroaniline** (POPE), 1911, P., 74.
- 2-Benzoyloxybenzyl-*p*-nitroacetanilide**, 3:5-*di*bromo- (AUWERS and EISENLOHR), 1909, A., i, 916.
- 5-Benzoyloxy-1-*p*-bromophenyl-1:2:3-triazole-4-carboxylic acid**, ethyl ester (DIMROTH and STAHL), 1905, A., i, 386.
- Benzoyloxyisobutyronitrile** and *m*-nitro- (DAVIS), 1910, T., 951; P., 90.
- 1-Benzoyloxycamphene**, formation of (LEES), 1903, T., 145.
- a*- and *b*-*o*-Benzoyloxy-*cinnamic acid*** and their methyl esters (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 296.
- p*-Benzoyloxydiazaminobenzene** (WOHL and GOLDENBERG), 1904, A., i, 209.
- Benzoyloxydiphenylamine**, bromo-derivatives (SMITH and ORTON), 1908, T., 318; P., 27.
- 6-Benzoyloxy-1:5-diphenylbenzodioxazole** (EINHORN, COBLINER, and PFEIFFER), 1904, A., i, 241.
- p*-Benzoyloxydiphenylphthalide** (MEYER and FISCHER), 1911, A., i, 723.
- Benzoyloxyethylamine**, *p*-amino-, and its hydrochloride picrate, and dibenzoyl derivative (FORSTER and FIERZ), 1908, T., 1869; P., 227.
- a*-Benzoyloxyisohexonitrile** (DAVIS), 1910, T., 951; P., 89.
- Benzoyloxyhomopiperonylonitrile** (FRANCIS and DAVIS), 1909, T., 1406.
- 7-Benzoyloxy-8-methoxy-2-methyl-tetrahydroisquinoline** and its hydrobromide (PYMAN and REMFRY), 1912, T., 1607.
- 4'-Benzoyloxy-2-methoxystilbene**, and *p*-nitro- (STOERMER and FRIEMEL), 1911, A., i, 632.
- β -Benzoyloxy- β -methyl- and - β -phenylacrylic acids**, α -cyano-, esters (SCHMITT), 1903, A., i, 399.
- 2-Benzoyloxy-4-methylcoumarone** (AUWERS), 1910, A., i, 630.
- β -Benzoyloxy- β -3:4-methylenedioxyphenylethylidimethylamine** and its additive salts and physiological action (PYMAN), 1908, T., 1796; P., 208.
- 6- and 7-Benzoyloxy-2-methyltetrahydroisquinoline** (PYMAN and REMFRY), 1912, T., 1605.
- β -Benzoyloxynaphthoic acid**, ethyl ester (LASSAR-COHN and LÖWENSTEIN), 1908, A., i, 985.
- a*-Benzoyloxyoctonitrile** (DAVIS), 1910, T., 951; P., 89.
- Benzoyloxyolefines**, formation of (LEES), 1903, T., 145.
- o*-Benzoyloxyphenylacetamide** (AUWERS), 1907, A., i, 929.

- o*-Benzoyloxyphenylacetoneitrile** (AUWERS), 1907, A., i, 929.
- 3-Benzoyloxy-1-phenylbenzoxazole** (KAUFFMANN and DE PAY), 1906, A., i, 168.
- 5-Benzoyloxy-1-phenylbenzoxazole** (HENRICH and WAGNER), 1903, A., i, 88.
- α*-Benzoyloxy- γ -phenylisocrotononitrile** (FRANCIS and DAVIS), 1909, T., 1406.
- α*-Benzoyloxy- α -phenylethylene**, transformation of, into dibenzoylmethane (CLAISEN and HAASE), 1904, A., i, 67.
- 5-Benzoyloxy-1-phenyl-3-furylpyrazole** (TORREY and ZANETTI), 1910, A., i, 893.
- 1-Benzoyloxy-2-phenylindole** (ANGELI and ANGELICO), 1907, A., i, 153.
- 8-Benzoyloxy-5-phenyl-3-methylidihydroacridine** (POPE and HOWARD), 1910, T., 83.
- 8-Benzoyloxy-11-phenyl- β -naphth-*axanthen*** (POPE and HOWARD), 1910, T., 83.
- p*-Benzoyloxyphenylphthalide** (MEYER and FISCHER), 1911, A., i, 723.
- 2-Benzoyloxy-3-phenyltetrahydroquinazoline**, 1-benzoyl derivative (HELLER and KÜHN), 1904, A., i, 943.
- Benzoyloxypropylpiperidine** and its hydrochloride (DUNLOP), 1912, T., 2002.
- p*-Benzoyloxystyrene**, ω -nitro- (REMFY), 1911, T., 286; P., 21.
- Benzoylperoxysulphonic acid**, potassium salt (WILLSTÄTTER and HAUSENSTEIN), 1909, A., ii, 567.
- 5-Benzoyloxy-1-*p*-tolyl-1:2:3-triazole-4-carboxylic acid**, ethyl ester (DIMROTH and STAHL), 1905, A., i, 385.
- Benzoylpentaglycylaminoacetic acid** and its ethyl ester and silver salt (CURTIUS and BENRATH), 1904, A., i, 499; (CURTIUS and WÜSTENFELD), 1904, A., i, 833; (CURTIUS and LEVY), 1904, A., i, 834.
- α*-Benzoyl- $\Delta\beta$ -pentenoic acid**, γ -amino-, ethyl ester (BORSCH and FELS), 1906, A., i, 509; 1907, A., i, 81.
- γ -Benzoyl- $\Delta\beta$ -penten- β -ol** (DIECKMANN), 1912, A., i, 869.
- Benzoylphenacyldialuric acid** (KÜHLING and SCHNEIDER), 1909, A., i, 425.
- 9-Benzoylphenanthrene** (WILLGERODT and ALBERT), 1911, A., i, 883.
- 3-Benzoylphenothiazine**, 5-nitro- (ULLMANN and WOSNESSENSKY), 1909, A., i, 475.
- 3-Benzoylphenoxazine**, 5-nitro- (ULLMANN and WOSNESSENSKY), 1909, A., i, 475.
- 5-Benzoylphenaxazine**, 3-nitro- (ULLMANN and BROIDO), 1906, A., i, 190.
- Benzoylphenylacetamide** (ATKINSON, INGHAM, and THORPE), 1907, T., 593.
- preparation of (JOHNSON and CHERNOFF), 1911, A., i, 372.
- Benzoylphenylacetylene**, action of aniline on, and its phenylhydrazone (WATSON), 1904, T., 1326; P., 181.
- Benzoylphenylalanine**, lactimone of (MOHR and STROSCHEIN), 1909, A., i, 581.
- lactone and anilide of (MOHR and STROSCHEIN), 1910, A., i, 736.
- methyl and ethyl esters, amide, and chloride of (MAX), 1909, A., i, 926.
- Benzoylphenylalanylglycine** (MOHR and STROSCHEIN), 1910, A., i, 736.
- Benzoylphenylanthranilic acid**, *o*-amino- (*anthranoylphenylanthranilic acid*) (SCHROETER and EISLEB), 1909, A., i, 578.
- o*-nitro-, and its methyl ester, and silver salt (SCHROETER and EISLEB), 1909, A., i, 578.
- p*-Benzoylphenylazoisimide** (DIMROTH and PEISTER), 1910, A., i, 905.
- Benzoylphenylazomethylene** (*azibenzil*), mechanism of formation of diphenylketen from (SCHROETER and MOTSCHMANN), 1909, A., i, 774.
- Benzoyl- α -phenylbenzylhydrazine**, *m*-nitro- (FRANZEN), 1909, A., i, 575.
- Benzoylphenylbutylamine** (BUSCH and LEEFHELM), 1908, A., i, 152.
- β -Benzoyl- α -phenylbutyric acid** and its methyl ester (REIMER and REYNOLDS), 1912, A., i, 769.
- γ -Benzoyl- β -phenylbutyric acid** and its methyl ester (KÖHLER and DOVER), 1907, A., i, 537.
- lactones of, and β - and γ -bromo-, and $\beta\gamma$ -dibromo-, and γ -hydroxy- (KÖHLER), 1911, A., i, 985.
- γ -Benzoyl- β -phenylbutyric acid**, β -chloro-, methyl ester (KÖHLER), 1911, A., i, 985.
- α -Benzoyl- β -phenylisobutyric acid**, ethyl ester (HOPE and PERKIN), 1909, T., 2046.
- γ -Benzoyl- β -phenylbutyrolactonic acid** (KÖHLER), 1911, A., i, 985.
- s*-Benzoylphenylcarbamide** (MOHR), 1906, A., i, 252.
- s*-Benzoylphenylcarbamide**, *m*-nitro- (BRUCE), 1904, A., i, 491.

- s-Benzoylphenylisocarbamide** methyl ether, and its salts, and *m*-nitro- (BRUCE), 1904, A., i, 491.
- γ -Benzoyl- β -phenyl- α -dimethylbutyric acid** and γ -bromo-, and γ -hydroxy-, and their derivatives (KOHLE, HERITAGE, and MACLEOD), 1911, A., i, 863.
- 1-Benzoylphenyl-2:3-dimethyl-5-pyrazolone** (TORREY and RAFSKY), 1911, A., i, 85.
- 4-Benzoyl-1-phenyl-2:3-dimethylpyrazolone**, 2:5-thio-, and its phenylhydrazine and methiodide (MICHAELIS and ENGELHARDT), 1908, A., i, 918.
- Benzoylphenyldimethyl- ψ -thiocarbamide** (WHEELER and BEARDSLEY), 1903, A., i, 294.
- Benzoyl-*m*-phenylenediamine**, *m*- and *p*-amino- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1910, A., i, 481.
- Benzoyl-*p*-phenylenediamine** hydrochloride (MORGAN and ALCOCK), 1909, T., 1323; P., 202.
- Benzoyl-*p*-phenylenediamine**, *m*-, and *p*-amino- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1910, A., i, 481.
- nitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 607.
- Benzoyl-*p*-phenylenediaminesulphonic acid**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 964.
- N*-Benzoylphenylethylamine**, α -*p*-hydroxy- (TUTIN, CATON, and HANN), 1909, T., 2123.
- α -, and *l*- α -*p*-hydroxy- (MOORE), 1911, T., 420.
- γ -Benzoyl- β -phenyl- α -ethylbutyric acid** and its methyl ester (KOHLE, HERITAGE, and MACLEOD), 1911, A., i, 863.
- α -Benzoyl- α -phenyl- β -ethylidenehydrazine**, *p*-chloro-, *m*-, and *p*-nitro- (LOCKEMANN, LOBENSTEIN, ENDE, and HEROLD), 1910, A., i, 637.
- β -Benzoyl- α -phenylethylmalonic acid**, methyl ester (KOHLE, HERITAGE, and MACLEOD), 1911, A., i, 864.
- γ -Benzoyl- β -phenylethylmalonic acid**, ethyl ester and γ -bromo-, and methyl ester and γ -bromo-, and α -*dibromo*- (KOHLE), 1911, A., i, 984.
- α -Benzoyl- β -phenyl- α -ethylpropionic acid**, ethyl ester (HOPE and PERKIN), 1909, T., 2050.
- N*-Benzoyl-3-phenylglycyl-*p*-cresol** and its oxime (AUWERS and MÜLLER), 1909, A., i, 223.
- 2-Benzoyl-5-phenylglyoxaline** and its 1-methyl methiodide derivative (PINNER), 1905, A., i, 476.
- and its 1-sulphonic acid and its salts (PINNER), 1903, A., i, 123.
- γ -Benzoyl-8-phenyl- γ -heptolactone**, γ -hydroxy- (KOHLE), 1911, A., i, 986.
- s-Benzoylphenylhydrazine**, method of formation of (ANGELI and CASTELLANA), 1909, A., i, 421.
- s-Benzoylphenylhydrazine**, *o*-amino-, benzoyl derivative (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 58.
- o*-bromo- (WISLICENUS and FISCHER), 1910, A., i, 621.
- p*-bromo- (WISLICENUS and ELVERT), 1909, A., i, 31.
- α -nitro- β -nitroso- (PONZIO), 1908, A., i, 483; (PONZIO and CHARRIER), 1908, A., i, 522.
- as*-Benzoylphenylhydrazine**, action of, on *o*-benzoquinone (McPHERSON and LUCAS), 1909, A., i, 193.
- action of, on halogen derivatives of quinones (McPHERSON and DUBOIS), 1908, A., i, 461.
- as*-Benzoylphenylhydrazine**, *p*-chloro-, and *m*-, and *p*-nitro-, and their derivatives (LOCKEMANN, LOBENSTEIN, ENDE, and HEROLD), 1910, A., i, 637.
- γ -Benzoyl- β -phenyl- α -methylbutyric acids** and their esters (KOHLE, HERITAGE, and MACLEOD), 1911, A., i, 863.
- 4-Benzoyl-1-phenyl-2-methyldihydropyrazole**, 2:5-imino-. See 4-Benzoyl-iminopyrine.
- 4-Benzoyl-1-phenyl-3-methylpyrazole**, and its 5-amino-, 5-anilino-, 5-diethylamino-, and 5-chloro-derivatives (MICHAELIS and BENDER), 1903, A., i, 288.
- 4-Benzoyl-1-phenyl-3-methylpyrazole**, 5-amino-, methiodide and methochloride of, and 5-chloro-, methiodide of (MICHAELIS and ENGELHARDT), 1908, A., i, 918.
- 5-thiol-, and its alkyl and acyl ethers (MICHAELIS and LEHMANN), 1908, A., i, 691.
- 4-Benzoyl-1-phenyl-3-methylpyrazole-5-sulphonic acid** (MICHAELIS and LEHMANN), 1908, A., i, 691.
- 1-Benzoylphenyl-3-methyl-5-pyrazolone** and its hydrochloride (TORREY and RAFSKY), 1911, A., i, 84.
- 4-Benzoyl-1-phenyl-3-methyl-5-pyrazolone**, preparation and isomeric modifications of (MICHAELIS and ENGELHARDT), 1908, A., i, 918.

- 4-Benzoyl-1-phenyl-3-methylpyrazolone, 5-thio-, and its derivatives (MICHAELIS and LEHMANN), 1908, A., i, 690.
- 2-Benzoyl-3-phenyl- β -naphthaquinoline and -1-carboxylic acid (BORSCHÉ), 1909, A., i, 957.
- 6-Benzoyl-4-phenyl-1:2:5-oxadiazine, 4-hydroxy-, and its hydrochloride and sodium salt (DIELS and SASSE), 1907, A., i, 1086.
- 2-Benzoyl-3-phenylcyclopentanone-4-carboxylic acid, methyl ester (STOBBE), 1903, A., i, 421.
methyl ester, and its oxime, semicarbazone, and phenylpyrazole (STOBBE and WERDERMANN), 1903, A., i, 423.
- 1-Benzoyl-2-phenyl- Δ^1 - and - Δ^2 -cyclopentenones (BAUER), 1912, A., i, 778.
- α -Benzoyl- β -phenylpropane and its phenylhydrazone (HARRIES and GOLLNITZ), 1904, A., i, 427.
- β -Benzoyl- α -phenylpropionic acid, resolution of, and its oxime, semicarbazone, and *p*-nitrophenylhydrazone (HANN and LAPWORTH), 1904, T., 1360; P., 183.
- β -Benzoyl- β -phenylpropionic acid. See Desylacetic acid.
- β -Benzoyl- α -phenylpropionitrile and its condensation with benzylideneacetophenone (HANN and LAPWORTH), 1904, T., 1358; P., 183.
- 3-Benzoyl-2-phenylquinoline and its oxime (STARK and HOFFMANN), 1909, A., i, 255.
- 2-Benzoyl-3-phenyl-5-styryl-cyclohexan-5-ol-1-one (BORSCHÉ), 1910, A., i, 683.
- 2-Benzoyl-3-phenyl-5-styryl- Δ^5 -cyclohexenone (BORSCHÉ), 1910, A., i, 683.
- Benzoylphenyldithiocarbazinic acid, methyl ester, phenylhydrazone (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 533.
- Benzoylphenylurethane (WHEELER and JOHNSON), 1903, A., i, 693.
- γ -Benzoyl- β -phenylvinylacetic acid (KÖHLER), 1911, A., i, 985.
- γ -Benzoyl- β -phenylvinylmalonic acid, methyl ester and bromo- (KÖHLER), 1911, A., i, 984.
- Benzoylphloroglucinol and its diethyl ether (FISCHER), 1910, A., i, 249.
- Benzoylphloroglucinolcarboxylic acid and its silver salt (FISCHER), 1910, A., i, 248.
- Benzoylphosphamic acid and chloride (TITHERLEY and WORRALL), 1909, T., 1153; P., 150.
- 1-Benzoylphthalazine and its oxime and their additive salts (LIECK), 1906, A., i, 50.
- Benzoylphthalylacetone and its dioxime, bis-semicarbazone, and bisphenylhydrazones (BÜLOW and KOCH), 1904, A., i, 321.
new condensation derivatives of (BÜLOW and KOCH), 1904, A., i, 610.
- Benzoylphthalylcadaverine (v. BRAUN), 1909, A., i, 399.
- 3-Benzoylpicolinamide (KIRPAL), 1906, A., i, 694.
- Benzoylpiperidine, decomposition products (containing halogens) from (v. BRAUN and STEINDORFF), 1905, A., i, 596.
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- Benzoylpiperidoethanol, *m*-amino- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 846.
- β -Benzoyl- β -pivaloylpropane and its oxime (HALLER and BAUER), 1911, A., i, 727.
- d*- and *dl*-Benzoylproline, *m*-nitro- (FISCHER and ZEMPLÉN), 1909, A., i, 793.
- Benzoylcyclopropane, *m*-nitro- (KIJNER), 1911, A., i, 989.
- β -Benzoylpropane- α -diol. See Dimethylolacetophenone.
- α -Benzoylpropionanilide (WOLFF and GREULICH), 1912, A., i, 1029.
- α -Benzoylpropionic acid (HOPE and PERKIN), 1909, T., 2045.
- β -Benzoylpropionic acid, formation of, from α -hydroxyphenylbutyrolactone (ERLENMEYER), 1903, A., i, 32.
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- β -Benzoylpropionic acid, α -cyano- (BOUGAULT), 1908, A., i, 422.
- Benzoylpropionic acids, α - and β -, ethyl esters and salts, synthesis of (MEYER and TÖGEL), 1906, A., i, 758.
- s*-Benzoylpropylhydrazine, propyl ether (STOLLÉ and BENRATH), 1904, A., i, 936.
- 3-Benzoyl-1-isopropylcyclopentane and its oxime (BOUVEAULT and LEV-ALLOIS), 1909, A., i, 497.
- 5-Benzoylpyrazole-3:4-dicarboxylic acid (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 210.

- 4-Benzoyl-5-pyrazolone-3-carboxylo-benzoylhydrazide** (CURTIUS and GÖCKEL), 1911, A., i, 402.
- 3-Benzoylpyridine**, 2-amino-, and 2-hydroxy- (KIRPAL), 1906, A., i, 694.
- 2-Benzoylpyridineoxime** and its metallic derivatives (TSCHUGAEFF), 1906, A., i, 984.
- 1-Benzoylpyrrole** and its conversion into 2-benzoylpyrrole (PICTET and RUDSTEIN), 1904, A., i, 772.
- 1-Benzoylpyrrolidine** (v. BRAUN and BESCHKE), 1907, A., i, 79.
- Benzoylpyruvamide** (MUMM and MÜNCHEMEYER), 1911, A., i, 79.
- γ -imino- (MUMM and MÜNCHEMEYER), 1911, A., i, 80.
- Benzoylpyruvic acid** (*acetophenoneoxalic acid*), conversion of hydroxymethyleneacetophenone into (MUMM and MÜNCHEMEYER), 1911, A., i, 79.
- brucine salt (HILDITCH), 1911, T., 236.
- ethyl ester and its derivatives (BÜLOW), 1904, A., i, 623.
- action of benzaldehyde on (RUHEMANN), 1906, T., 1243; P., 198.
- Benzoylpyruvic acid**, *p*-amino-, acetyl derivative, and its ethyl ester, and its oxime (BÜLOW and NOTTBOHM), 1903, A., i, 863.
- γ -imino-, and its sodium salt (MUMM and MÜNCHEMEYER), 1911, A., i, 80.
- Benzoylquinine**, *o*- and *p*-amino-, and *o*- and *p*-nitro- (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), 1912, A., i, 577.
- Benzoylquinol** (HERZIG and HOFMANN), 1908, A., i, 190.
- monomethyl ether (KAUFFMANN and GROMBACH), 1905, A., i, 280.
- 4-Benzoylquinoline**. See Phenyl γ -quinolyl ketone.
- Benzoylresorcinol**, new synthesis of (FISCHER), 1910, A., i, 248.
- Benzoylsalicylic acid**. See *o*-Benzoyloxybenzoic acid.
- Benzoylsemicarbazide** and its acetyl derivative (RUPE and FIEDLER), 1912, A., i, 142.
- preparation and reactions of (DARAPSKY), 1908, A., i, 106.
- N*-Benzoylserine**, ethyl ester (ERLENMEYER), 1903, A., i, 29.
- Benzoylstyrene**, α -chloro- ω -*p*-nitro- (WIELAND), 1904, A., i, 433.
- β -Benzoyl- α -styrylpropionic acid**, α -cyano-, ethyl ester (HAWORTH), 1909, T., 484.
- Benzoylnecinamic acid** (TITHERLEY), 1904, T., 1689; P., 188.
- β -Benzoyl~~iso~~succinic acid**. See α -Carboxy- β -benzoylpropionic acid.
- Benzoylsuccinimide** (TITHERLEY), 1904, T., 1685; P., 188.
- Benzoylsyringic acid**, *p*-hydroxy- (FISCHER, FREUDENBERG, and LEPSIUS), 1911, A., i, 875.
- Benzoyltartaric acid**, *m*-nitro-, ethyl ester, preparation and rotation of (FRANKLAND, HEATHCOTE, and GREEN), 1903, T., 168.
- Benzoyltetraglycylaminoacetic acid** and ethyl ester, and its hydrazide, and benzylidene derivative (CURTIUS), 1904, A., i, 477; (CURTIUS and WÜSTENFELD), 1904, A., i, 833; (CURTIUS and LEVY), 1904, A., i, 834.
- N*-Benzoyltetrahydropapaverine**, and bromo- (PYMAN), 1909, T., 1617; P., 217.
- Benzoyltetrahydropyranthrone**, *di-p*-bromo- (SCHOLL and POTSCHWAUSCHEG), 1910, A., i, 272.
- Benzoyltetramethyl~~di~~aminopentanol** hydrochloride. See Aल्पine.
- Benzoyltetraphenylguanidine** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Benzoylthebaol** and its quinone (PSCHORR and HAAS), 1906, A., i, 204.
- Benzoylthiobenzanilide** and its *p*-bromoderivatives (JAMIESON), 1904, A., i, 396.
- Benzoylthiocamphorimide** (ODDO and MANNESSIER), 1910, A., i, 399.
- Benzoyl~~di~~thiocarbamic acid**, *m*- and *p*-bromo-, and *m*-nitro-, esters (JOHNSON, BATEMAN, PALMER, and BRAUTLECHT), 1906, A., i, 954.
- Benzoyl- ψ -thiocarbamides**, action of phenylhydrazine on (WHEELER and BEARDSLEY), 1903, A., i, 293; (JOHNSON and MENGE), 1904, A., i, 948.
- Benzoylthiocarbimide** and its reactions (DIXON and TAYLOR), 1908, T., 692; P., 74.
- Benzoylthiocarbimide**, *m*-nitro- (BRUCE), 1904, A., i, 491.
- Benzoyl~~di~~thiodiphenylcarbamyl carbamate** (JOHNSON and LEVY), 1907, A., i, 910.
- 2-Benzoyl-6-thiol-4-ketopenthiophen-5-carboxylic acid**, 3-hydroxy-, ethyl ester (APITZSCH and KELLER), 1910, A., i, 410.
- 4-Benzoylthiopyrine**. See 4-Benzoyl-1-phenyl-2:3-dimethylpyrazolone, 2:5-thio-.
- 4-Benzoyl- ψ -thiopyrine**. See 4-Benzoyl-5-methylthiol-1-phenyl-3-methylpyrazole.

- Benzoyl-*m*-tolylenediamine**, *m*-amino- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1910, A., i, 481.
- Benzoyl-*p*-tolylglycollonitrile** (FRANCIS and DAVIS), 1909, T., 1405.
- N*-Benzoyl-3-*p*-tolylglycyl-*p*-cresol** (AUWERS and MÜLLER), 1909, A., i, 223.
- Benzoyl-*m*-tolylguanidine** and its hydrochloride (PIERRON), 1911, A., i, 166.
- α -Benzoyl- β -*p*-tolylhydrazine** (PONZIO and CHARRIER), 1909, A., i, 444.
- Benzoyl-*p*-tolyl*dit*hiocarbazine acid**, methyl ester (BUSCH and BLUME), 1903, A., i, 535.
- Benzoyltriazooacetohydrazide** (CURTIUS and BOCKMÜHL), 1912, A., i, 426.
- Benzoyltriglycylaminoacetic acid** (CURTIUS and WÜSTENFELD), 1904, A., i, 833.
- α -Benzoyl- β -trimethylacetylstyrene** and its reactions (JAPP and MAITLAND), 1904, T., 1496; P., 205.
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- 3-Benzoyl-2:4:5-trimethylpyrrole** (COLACCICCHI and BERTONI), 1912, A., i, 1016.
- 1-Benzoyl-2:6:8-trimethyltetrahydroquinoline** (JONES and EVANS), 1911, T., 336.
- o*-Benzoyltriphenylacetic acid** and its sodium salt (KÖHLER), 1908, A., i, 778.
- 3-Benzoyl-1:1:2-triphenyl-4-cyclobutanone** and its dioxime (STAUDINGER and BUCHWITZ), 1910, A., i, 47.
- p*-Benzoyltriphenylcarbinol** (DELAÇRE), 1909, A., i, 807.
- 3-Benzoyl-2:4:6-triphenyl- Δ^3 -cyclohexene-1:1-dicarboxylic acid**, ethyl ester (DIECKMANN and KRON), 1908, A., i, 389.
- p*-Benzoyltriphenylmethane** (DELAÇRE), 1909, A., i, 807.
- 2-Benzoyl-1:3:4-triphenyl- Δ^1 -cyclopentene** (THIELE and RUGGLI), 1912, A., i, 867.
- Benzoyltriphenylpropenol** (KÖHLER and HERITAGE), 1905, A., i, 207; (KÖHLER and JOHNSTIN), 1905, A., i, 216.
- Benzoyltropeine *d*-camphorsulphonate** (BARROWCLIFF and TUTIN), 1909, T., 1972; P., 257.
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- Benzoyl- ψ -tropeine *d*- and *d*-bromocamphorsulphonates** (BARROWCLIFF and TUTIN), 1909, T., 1972; P., 257.
- Benzoylvanillin** and (*vic*-) *o*-nitro-, and their phenylhydrazones (POPOVICI), 1907, A., i, 935.
- 2-Benzoylxanthen** and its leuco-derivative (HELLER and v. KOSTANECKI), 1908, A., i, 445.
- 2-Benzoylxanthone** (HELLER and v. KOSTANECKI), 1908, A., i, 445.
- Benzoyl-*m*-4-xenol** and its dibromo- and benzoyl derivatives and methyl ether (LINARI), 1904, A., i, 64.
- 3-Benzoyl-*p*-xylylhydrazine** (WILLGERODT and LINDENBERG), 1905, A., i, 551.
- 3:4-Benzphenanthrene-1-carboxylic acid** (WEITZENBÖCK and LIEB), 1912, A., i, 548.
- Benzphenyliminomethyl ether** and its hydrochloride and platinichloride (MATSUI), 1910, A., i, 696.
- Benzpinaconediphenyl ether** (WIELAND), 1911, A., i, 851.
- Benzyl acetate**, 5-nitro-2-hydroxy-, bromide, *m*-bromo-*o*-hydroxy-, and its urethane, 3-bromo-5-nitro-, 3-nitro-4-hydroxy-, and 5-nitro-2-hydroxy-, and chloride, 3-nitro-4-hydroxy-, and 5-nitro-2-hydroxy- (AUWERS), 1906, A., i, 838.
- Benzyl alcohol**, preparation of (MEISENHEIMER), 1908, A., i, 417.
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- Benzyl alcohol**, *o*-amino-, and its acyl derivatives (AUWERS), 1904, A., i, 581.
m-amino-, benzoyl derivatives of (AUWERS and SONNENSTUHL), 1904, A., i, 1055.
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- 3-amino-2-hydroxy-, 3-amino-6-hydroxy-, and its methyl and ethyl ethers** and acetate, and 3-nitro-6-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 810.
- o*-bromo-*p*-hydroxy-** (AUWERS and STRECKER), 1904, A., i, 999.

Benzyl alcohol, 3:4:5-*tri*- and *tetra*-bromo-2-hydroxy-, and their methyl ethers and acetyl derivatives (ZINCKE and v. HEDENSTRÖM), 1907, A., i, 125.

o-chloro- (METTLER), 1904, A., i, 1012.

*di*chloro*di*bromohydroxy- (ZINCKE and BUFF), 1905, A., i, 881.

3:5-*di*chloro-*p*-hydroxy-, ethyl ether of (METTLER), 1906, A., i, 851.

*tetra*chloro-*p*-hydroxy-, methyl and ethyl ethers and acetate of (ZINCKE, SCHNEIDER, and EMMERICH), 1903, A., i, 758.

o-hydroxy-. See Saligenin.

3:4-*di*hydroxy-, carbonate acetate (PAULY and ALEXANDER), 1909, A., i, 590.

o-hydroxylamino- (BAMBERGER), 1903, A., i, 417.

o-nitro-, action of light on (SACHS and HILPERT), 1904, A., i, 876.

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2:6-*d*initro-, and 2:4:6-*tri*nitro- (REICH, WETTER, and WIDMER), 1912, A., i, 959.

o-nitroso- (BAMBERGER), 1903, A., i, 417.

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Benzyl allyl ether (v. BRAUN), 1910, A., i, 479.

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3:5-*di*bromo-*o*-hydroxy-, and its acetyl derivative, decomposition of, by organic bases (AUWERS), 1904, A., i, 773.

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Benzyl bromide, 3:5-*di*bromo-2-, and -4-hydroxy- and *tetra*bromo-*o*-, -*m*-, and -*p*-hydroxy-, condensation of, with bases (AUWERS and SCHRÖTER), 1906, A., i, 259.

*di*bromo-*p*-hydroxy-, condensation products of, with aromatic bases (AUWERS and DOMBROWSKI), 1908, A., i, 333.

3:5-*di*bromo-4-hydroxy-, condensation of, with phenols (AUWERS and RIETZ), 1905, A., i, 887.

3-bromo-5-nitro-4-hydroxy-, compounds of, with amines, and their acetates (AUWERS and SCHRÖTER), 1906, A., i, 347.

*tetra*bromo-*o*-hydroxy-, interaction of, with dimethylaniline (AUWERS and ZAUBITZER), 1904, A., i, 999.

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2:6-*d*initro- (REICH and PINCZEWSKI), 1912, A., i, 361.

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o-mono- and *op*-di-nitro-, conversion of, into acridine derivatives (BAEZNER, GARDIOL, and GUEORGUIEFF), 1906, A., i, 699.

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o- and *p*-nitro-, condensation of, with acetylacetone (MECH), 1908, A., i, 655.

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p-cyano- (FREUND and REITZ), 1906, A., i, 602.

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Benzyl mercaptan, nitrite, and sulphide, tetrabromo-*p*-hydroxy-, and their acetyl derivatives (ZINCKE and BÖTTCHER), 1906, A., i, 167.

o-, *m*-, and *p*-nitro- (PRICE and TWISS), 1909, T., 1725 ; P., 232.

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p-amino-, and its benzoyl derivative, and *p*-nitro- (ROMEO), 1905, A., i, 435.

2:5-dibromo-3-nitro-4-hydroxy- (ZINCKE, FROHNEBERG, and KEMPF), 1911, A., i, 440.

o-nitro-, reduction of (FREUNDLER), 1904, A., i, 121.

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- Benzylacetamide**, amino-, transformation of, into benzoylacetamide (GUARESCHI), 1904, A., i, 891.
- Benzylacetanilide** (AUGER), 1904, A., i, 805.
- Benzylacetic acid**. See β -Phenylpropionic acid.
- Benzylacetoacetaldehyde** and its bisphenylhydrazone (TAFEL and HAHN), 1907, A., i, 765.
- Benzylacetoacetamide** (GUARESCHI), 1905, A., i, 823.
- Benzylacetoacetic acid**, ethyl ester, complete reduction of (TAFEL and HAHN), 1907, A., i, 765.
- Benzylacetoacetic acid**, *tetrabromo-p*-hydroxy-, ethyl ester (ZINCKE and BÖTTCHER), 1906, A., i, 166.
- cyano-, ethyl ester, and its reactions (RUHEMANN), 1904, T., 1456: P., 206.
- o*-cyano-, ethyl ester (MITCHELL and THORPE), 1910, T., 2278.
- Benzylacetone**, α -amino-, and its additive salts (SONN), 1908, A., i, 55.
- tetrabromo-p*-hydroxy-, and its acetyl derivative (ZINCKE and BÖTTCHER), 1906, A., i, 166.
- p*-nitro-, and its dicarboxylic acid, ethyl ester (FICHTER and WORTSMANN), 1904, A., i, 592.
- and its phenylhydrazone, and *op*-dinetro- (ALBER), 1905, A., i, 235.
- isonitroso-, preparation of (PONZIO), 1906, A., i, 66.
- Benzylacetonephenylhydrazone** (SCHLENK), 1908, A., i, 738.
- Benzylacetophenone**, $\alpha\beta$ -dibromo-, stereoisomeric modifications of (SMEDLEY), 1909, P., 259.
- 2:3:4-trihydroxy- (DUTTA and WATSON), 1912, T., 1241: P., 106.
- Benzylacetylacetone** (HARRIES and GOLLNITZ), 1904, A., i, 427.
- cyano-, and its reactions (RUHEMANN), 1904, T., 1454: P., 206.
- α -**Benzylacetaldehyde** and its semicarbazone (SOMMELET), 1907, A., i, 109.
- 9-Benzylacridine** and its additive salts (DECKER and HOCK), 1904, A., i, 620.
- 2'-Benzyl-alcohol-azoxy-2-benzoic acid**. See *o*-Toluene-*o*-azoxybenzoic acid, ω -hydroxy-.
- N*-Benzylaldoxime**, molecular rearrangement of (KUCHARA), 1908, A., i, 900.
- Benzylalkylconhydrinium** iodides, isomeric, and their additive salts (SCHOLTZ and PAWLICKI), 1905, A., i, 473.
- Benzylalkylconinium** salts (SCHOLTZ), 1904, A., i, 1044.
- Benzylallyliminomalonuric acid** (JOHNSON and HILL), 1912, A., i, 135.
- Benzylallylmalononic acid** and its silver salt (JOHNSON and HILL), 1912, A., i, 135.
- ethyl ester (JOHNSON and HILL), 1911, A., i, 503.
- 5-Benzyl-5-allylmalonylguanidine** and its hydrochloride (HOLMBERG), 1912, A., i, 135.
- Benzylallyl-*p*-phenetidine** and its picrate (WEDEKIND and FRÖHLICH), 1907, A., i, 410.
- Benzylallyl-*o*-toluidine** and its compound with methyl iodide (WEDEKIND and OBERHEIDE), 1904, A., i, 992.
- Benzylallyl-*p*-toluidine** and its picrate (WEDEKIND and OBERHEIDE), 1904, A., i, 733.
- Benzylamine**, preparation of (SABATIER and MAILHE), 1911, A., i, 627.
- absorption spectrum of (PURVIS), 1910, T., 1552.
- action of, on *s*-dibromosuccinic acid (FRANKLAND), 1911, T., 1775: P., 206.
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- auribromide (DEHN and DEWEY), 1911, A., i, 915.
- mercuribromide (DEHN), 1912, A., i, 241.
- telluri-bromide and -chloride (GUTBIER, FLURY, and EWALD), 1912, A., i, 689.
- acyl derivatives (EINHORN), 1905, A., i, 344.
- N*-formyl derivative (VAN ROMBURGH; VAN ROMBURGH and VAN DORSSSEN), 1906, A., i, 3.
- silver succinimide (TSCHUGAEFF), 1907, A., i, 188.
- and *o*-chloro-, and its salts (FRANZEN), 1905, A., i, 427.
- Benzylamine**, amino-, aminohydroxy-, and nitrohydroxy-derivatives and their *N*-acyl derivatives (EINHORN, BISCHKOPFF, SZELINSKI, SCHUPP, LADISCH, and MAUERMAYER), 1906, A., i, 246.
- 3-amino-2-hydroxy-, and its ω -benzoyl derivative (EINHORN), 1906, A., i, 658.
- p*-hydroxy-, salts of (TIFFENEAU), 1911, A., i, 810.
- 2:3- and 3:4-dihydroxy-, salts of (DOUETTEAU), 1911, A., i, 973.

- Benzylamine**, *m*-nitro-*o*-hydroxy-, benzoyl and chloroacetyl derivatives of (EINHORN), 1905, A., i, 345.
- Benzylamines**, methylated (EMDE), 1909, A., i, 709.
- cyano- (FISCHER and WOLTER), 1909, A., i, 638.
- Benzylamineacrylic acid**. See Methylcinnamic acid, ω -amino-.
- Benzylaminecarboxylic acid**. See Toluic acid, ω -amino-.
- Benzylaminoacetal** and analogues (RÜGHEIMER and SCHÖN), 1908, A., i, 153.
- Benzylaminoacetic acid**, ethyl ester and chloride hydrochloride (MANNICH and KUPHAL), 1912, A., i, 217.
- Benzylaminoacetic acid**, *p*-iodo-, phthaloyl derivative (WHEELER and CLAPP), 1908, A., i, 981.
- Benzylaminoacetobenzylamide** hydrochloride (MANNICH and KUPHAL), 1912, A., i, 217.
- ω -**Benzylaminoacetophenone**, phenylhydrazone (BUSCH and HEFELE), 1911, A., i, 583.
- β -**Benzylamino- β -amyl- and - β -hexylacrylonitriles** (MOUREU and LAZENNEC), 1906, A., i, 956.
- 1-Benzylaminoanthraquinone** (SEER and WEITZENBÖCK), 1910, A., i, 571.
- Benzylaminoazo-*p*-toluene** and its hydrochloride and nitrosoamine (BUSCH and BERGMANN), 1905, A., i, 309.
- Benzyl-*o*-aminobenzoic acid**, and *o*- and *p*-nitro- (V. PAWLEWSKI), 1904, A., i, 316.
- Benzyl-*o*-aminobenzoic acid**, 2:4:6-trinitro- (REICH, WELTER, and WIDMER), 1912, A., i, 959.
- Benzyl-*p*-aminobenzoic acid**, *p*-nitro-, phenyl ester (BAKUNIN and PROFILO), 1907, A., i, 911.
- Benzyl-*m*- and -*p*-aminobenzoic acids**, 3:5-dibromo-*o*-hydroxy-, and their *N*-acetyl derivatives (AUWERS and UL-RECHT), 1904, A., i, 739.
- β -**Benzylamino- α -benzylcarbamidopropionic acid** (FRANKLAND), 1910, T., 1689, P., 203.
- Benzylaminobromosuccinic acid**, benzylamine salt (FRANKLAND), 1911, T., 1780; P., 206.
- Benzylaminobutyric acid**, benzylamide of (SANI), 1906, A., i, 653.
- 4-Benzylamino-*m*-cresol** and its sodium salt and hydrochloride (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1910, A., i, 28.
- 3-Benzylamino-1:4-diphenyl-4:5-dihydro-1:2:4-triazole**, 5-hydroxy- (BUSCH and MEHRTENS), 1906, A., i, 116.
- Benzylaminoformic acid**, esters (WEERMAN and JONGKEES), 1906, A., i, 665.
- Benzylaminocyclohexane** and its phenylcarbamide (SABATIER and MAILHE), 1912, A., i, 103.
- 3-Benzylamino-1-indone**, 2-iodo- (SIMONIS and KIRSCHTEN), 1912, A., i, 270.
- α -**Benzylaminonaphthalene-4:8-disulphonic acid**, sodium hydrogen salt (BUCHERER and SEYDE), 1907, A., i, 511.
- α -**Benzylaminonaphthalene-4-sulphonic acid** and its sodium salt (BUCHERER and SEYDE), 1907, A., i, 510.
- 4-Benzylaminophenol** and its hydrochloride (BAKUNIN), 1906, A., i, 496.
- and its salts with acids (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1909, A., i, 915.
- 4-Benzylaminophenol**, 3-chloro- and its hydrochloride (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1910, A., i, 28.
- β -**Benzylamino- β -phenylacrylic acid**, ethyl ester, and - β -phenylacrylonitrile (MOUREU and LAZENNEC), 1906, A., i, 956.
- β -**Benzylamino- β -phenyl- $\alpha\alpha$ -dimethylpropionic acid**, and its salts, ethyl ester, and lactam (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 588.
- 5-Benzylamino-1-phenyl-3-methylpyrazole** and its acyl derivatives and additive salts (MICHAELIS and BLUME), 1905, A., i, 479.
- Benzylaminostyryl phenyl ketone** (ANDRÉ), 1911, A., i, 269.
- Benzylaminosuccinobenzylimide** and nitroso- (WARREN and GROSE), 1912, A., i, 961.
- 4-Benzylaminotoluene**, 3:5-dinitro-, preparation of (ULLMANN), 1908, A., i, 627.
- Benzylammonium platinibromide** (GUTBIER, BAURIEDEL, and OBERMAIER), 1911, A., i, 33.
- rutheni-bromide and -chloride (GUTBIER and LEUCHS), 1911, A., i, 183.
- iridichloride (GUTBIER and LINDNER), 1909, A., ii, 1026.
- iridi-chloride and -bromide (GUTBIER and RIESS), 1910, A., i, 98.
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- Benzylammonium** nitrite (RÂV and DATTA), 1911, T., 1475; P., 127.
- Benzylisomylconinium** iodides, isomeric (SCHOLTZ), 1905, A., i, 297.
- Benzyl-aniline**, *p*-bromoaniline, and *o*- and *p*-chloroanilines, *o*-hydroxy-, and their acetates (PAAL), 1903, A., i, 340.
- and its *N*-nitroso- and formyl derivatives (WALLACH), 1906, A., i, 161.
- crystallographic constants of, and its miscibility in the solid state (JAEGER), 1906, A., i, 112.
- spontaneous crystallisation and melting- and freezing-point curves of mixtures of, and azobenzene (ISAAC), 1910, A., ii, 1034.
- compound of, with trinitrobenzene (SUDBOROUGH and BEARD), 1910, T., 788.
- influence of temperature on the action of acetyl thiocyanate on (DORAN and DIXON), 1905, T., 339; P., 77.
- α -bromopropionyl derivative, condensation of, with sodium derivatives of phenols (BISCHOFF), 1905, A., i, 84.
- Benzylaniline**, 3:5-dibromo-*o*-hydroxy-, *N*-acyl derivatives (AUWERS, BERGS, and WINTERNITZ), 1904, A., i, 740.
- N*-benzoate of (AUWERS and SONNENSTAHL), 1904, A., i, 1055.
- tetrabromo-*p*-hydroxy- (ZINCKE and BÖTTCHER), 1906, A., i, 166.
- bromonitro- and nitro-derivatives (BLANKSMA), 1903, A., i, 334.
- chloro-, *N*-acetyl derivative (FRERICHS), 1903, A., i, 610.
- m*- and *p*-chloro-, and their hydrochlorides (LAW), 1912, T., 160.
- o*-chloro- ω -cyano- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 438.
- m*-cyano-, and its hydrochloride, picrate, and nitrosamine, and *p*-cyano-, and its hydrochloride and nitroso-derivative (FISCHER and WOLTER), 1909, A., i, 639.
- o*- and *m*-hydroxy-, bromo-derivatives of, and their *O*- and *N*-acetyl derivatives (AUWERS, ANSELMINO, and RICHTER), 1904, A., i, 738.
- o*- and *p*-mono- and 1:3-di-hydroxy- (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- p*-nitro-, action of alkali sulphides on (ALWAY and WALKER), 1903, A., i, 753.
- 2:6-dinitro-, and its platinichloride (REICH and PINCZEWSKI), 1912, A., i, 861.
- Benzylaniline**, 2:4:6-trinitro- (REICH, WETTER, and WIDMER), 1912, A., i, 959.
- Benzylanilines**, alkylated, derivatives of (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- Benzylanilinodiazobenzene** (VIGNON and SIMONET), 1905, A., i, 495.
- Benzyl-2:5-endoanilo-1-phenyl-2:3-dimethylpyrazoles**, 2- and ψ -, and their derivatives (MICHAELIS, MIELECKE, and LUTZE), 1908, A., i, 62.
- Benzylanilopyrrine**. See Benzyl-2:5-endoanilo-1-phenyl-2:3-dimethylpyrazole.
- Benzyl-*o*-anisidine** and its allyl and methyl derivatives (WEDEKIND and FRÖHLICH), 1906, A., i, 162.
- Benzyl-*o*-anisidine**, *o*- and *p*-hydroxy- (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- Benzyl-*p*-anisidine** (FRÖHLICH and WEDEKIND), 1907, A., i, 410.
- Benzyl-*p*-anisidine**, *o*-hydroxy- (HANTZSCH and WECHSLER), 1903, A., i, 211.
- o*- and *p*-mono- and 1:3-di-hydroxy- (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- Benzyl-*o*- and -*p*-anisidines**, *o*-hydroxy-, and their acetates (PAAL), 1903, A., i, 340.
- 2:4:6-trinitro- (REICH, WETTER, and WIDMER), 1912, A., i, 959.
- Benzylanisylideneindene** (THIELE and BÜHNER), 1906, A., i, 571.
- Benzylanthranil** (KERNOT and PETRONE), 1905, A., i, 284.
- Benzylanthranilic acid** and its phenyl, tolyl, and naphthyl esters (KERNOT and PETRONE), 1905, A., i, 283.
- Benzylanthranilic acid**, 3:5-dibromo-*o*-hydroxy-, and its *N*-acetyl derivative (AUWERS and ULRICH), 1904, A., i, 739.
- ω -cyano- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 438.
- Benzylanthrone**, dichloro- (PADOVA), 1909, A., i, 655.
- 1-Benzylantipyrrine**. See 1-Benzyl-2:3-dimethyl-5-pyrazolone.
- 4-Benzylantipyrrine**, α -hydroxy- (MICHAELIS and ENGELHARDT), 1908, A., i, 918.
- Benzylarsine** and its platinichloride (DEHN and WILLIAMS), 1908, A., i, 721.
- disulphide and **Benzylarsinic acid** (DEHN and McGRATH), 1906, A., i, 341.

- 4:5-Benzylazimino-*o*-toluidine** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 928.
- Benzylbenzenylamidine, 2:4:5-trichloro-** (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 445.
- Benzylbenzimid chloride** (LEY and HOLZWEISSIG), 1903, A., i, 282.
- N*-Benzylbenzimidino-ethers** (LANDER), 1903, T., 326; P., 16.
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- 1-Benzylbenzopyrazolone and its additive salts** (MILRATH), 1908, A., i, 1014.
- 2-Benzyl-*p*-benzoquinone** (STOLLÉ and MÖRING), 1904, A., i, 875.
- β -Benzyl- γ -benzylaminomethylhydantoin and its hydrochloride** (FRANKLAND), 1910, T., 1689; P., 203.
- Benzylbenzylideneacetone.** See Styryl β -phenylethyl ketone.
- β -Benzyl- γ -benzylidenebutiric acid and its methyl ester** (REYNOLDS), 1911, A., i, 861.
- β -Benzyl- γ -benzylidenebutirophenone.** See β -Benzyl- β -styrylpropiofenone.
- 5-Benzyl-2-benzylideneglyoxalidone** (FINGER and ZEH), 1910, A., i, 591.
- 1-Benzyl-3-benzylideneindene** (THIELE and BÜHNER), 1906, A., i, 569.
*di-*mp*'*-nitro- α -hydroxy- (THIELE and BÜHNER), 1906, A., i, 571.
- β -Benzyl- γ -benzylidene- α -methylpropyl benzyl ketone** (REIMER and REYNOLDS), 1912, A., i, 770.
- 1-Benzyl-4-benzylidene-3-methyl-5-pyrazolone** (CURTIUS and SCHNEIDERS), 1912, A., i, 138.
- Benzylboric acid and its isobutyl ester** (KHOTINSKY and MELAMED), 1909, A., i, 864.
- Benzylborneols, α - and β -, and their dehydration** (HALLER and BAUER), 1906, A., i, 440.
- N*-Benzylbromoisopapaverine** (DECKER and GIRARD), 1904, A., i, 1045.
- β -Benzyl-butane and -butyl ethyl ether** (TAFEL and HAHL), 1907, A., i, 765.
- β -Benzyl-*n*-butyl alcohol and its acetate** (GUERBET), 1908, A., i, 636.
- β -Benzylisobutylcarbinol and its acetate** (GUERBET), 1908, A., i, 636.
- Benzylbutyleoninium iodides, isomeric** (SCHOLTZ), 1906, A., i, 297.
- Benzylbutyramide** (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.
- α -Benzylbutyric acid, β -bromo-** (FICHTER and ALBER), 1907, A., i, 86.
 γ -trichloro- β -hydroxy-, and its salts, (DOEBNER and KERSTEN), 1906, A., i, 787.
- β -Benzylisobutyric acid, α -amino-, and its nitrile, hydrochloride of** (JAWEL-OFF), 1906, A., i, 427.
- Benzylcamphenes, α - and β -** (HALLER and BAUER), 1906, A., i, 440.
- Benzylcamphoformeneamine and its carboxylic acid and its benzylamine salt** (TINGLE and HOFFMANN), 1905, A., i, 799.
- Benzylcamphor, bromination of** (HALLER and MINGUIN), 1903, A., i, 267.
- Benzylcarbamide, *o*-nitro-** (DIELS and WAGNER), 1912, A., i, 512.
- 6-Benzylcarbamino- α -naphthol-3-sulphonic acid, and nitro-, sodium salts** (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 667.
- 9-Benzylcarbazole** (CASSELLA & Co.), 1910, A., i, 775.
and its picrate (LEVY), 1912, A., i, 304.
- Benzylcarbinol (β -phenylethyl alcohol), presence of, in the oil of pine-needles from Aleppo, Algeria** (GRIMAL), 1907, A., i, 329.
and its acetate (GRIGNARD), 1903, A., i, 819.
- Benzylcarbinol, *p*-amino-, and its hydrochloride and *p*-nitro-** (EHRlich and PISCHTCHIMUKI), 1912, A., i, 853.
- Benzylcarbithionic acid** (HOUBEN and KESSELKAUL), 1903, A., i, 42.
and its salts (HOUBEN and POHL), 1906, A., i, 847.
methyl ester (HOUBEN and SCHULTZE), 1910, A., i, 711.
- Benzylchloroacetamide** (MANNICH and KUPHAL), 1912, A., i, 851.
- Benzylmono- and -dichloroamines, preparation and decomposition of** (DATTA), 1912, A., i, 962.
- Benzyl-mono-di- and tri-chlorocarbamide** (CHATTAWAY and WÜNSCH), 1909, T., 134.
- Benzylchloromethylmalonic acid, ethyl ester** (KÜTZ and ZÖRNIG), 1907, A., i, 112.
- Benzylchloroisopropyl alcohol** (FOURNEAU and TIFFENEAU), 1908, A., i, 163.
- Benzyltrichlorosilicane** (MELZER), 1908, A., i, 967.
- α -Benzylcinnamic acid, ethyl ester** (AUWERS and EISENLOHR), 1911, A., ii, 783.
- β -Benzylcinnamic acid.** See β - γ -Diphenylcrotonic acid.
- Benzyl cinnamylbenzyl ketone, α -chloro-** (HERTZKA), 1905, A., i, 292.
- Benzyl compounds of sulphur, oxidation of** (SMYTHE), 1912, T., 2076; P., 242.

- 4-Benzylcoumaran** (MARSHALK), 1910, A., i, 55.
- Benzylisocoumaranone** (CZAPLICKI, v. KOSTANECKI, and LAMPE), 1909, A., i, 235.
- Benzyl-*p*-cresol and -*p*-cumenol, 3:5-dibromo-4-hydroxy-** (AUWERS and RIETZ), 1905, A., i, 888.
- α -Benzylserotonic acid and its salts, amides, and chloride** (FICHTER and ALBER), 1907, A., i, 86.
- Benzyl- ψ -cumidine, *o*-hydroxy-, and its acetate** (PAAL), 1903, A., i, 340.
- Benzylcyanide-*o*-carboxylic acid.** See *o*-Carboxyphenylacetoneitrile.
- Benzylcyanacetamide, *m*- and *p*-nitro-, and their condensation products** (ISSOGGIO), 1904, A., i, 525.
- 2-Benzyl-*p*-cymene, optical constants of and its disulphonic acid and its derivatives** (KLAGES), 1907, A., i, 599.
- Benzyldeoxybenzoin, bromo-** (THIELE and RUGGLI), 1912, A., i, 867.
- o*- α -dichloro-** (KLAGES and TETZNER), 1903, A., i, 101.
- chloro-*o*-, *m*-, and *p*-nitro-** (STOBBE and WILSON), 1910, A., i, 624.
- Benzyl derivatives containing sulphur and their decomposition** (FROMM and ACHERT), 1903, A., i, 340.
- Benzyl diacetonalkamine.** See Methyl- β -benzylaminoisobutylcarbinol.
- N*-Benzyl diacetonitrile** (v. MEYER and SCHUMACHER), 1908, A., i, 909.
- Benzyl dialkylacetic acids, asymmetric, preparation of** (DUMESNIL), 1911, A., i, 718.
- 1-Benzylisodialuric acid** (JOHNSON and JONES), 1909, A., i, 60.
- Benzyl dibenzyl ketone.** See $\alpha\gamma\delta$ -Triphenyl- β -butanone.
- Benzyl diethoxysilicyl oxide** (MARTIN and KIPPING), 1909, T., 310.
- Benzyl diethylamine, 5-nitro-2-hydroxy-** (EINHORN, BISCHOPFF, and SZELINSKI), 1906, A., i, 247.
- Benzyl di-ethyl- and -methyl-carbinols** (KONOWALOFF), 1904, A., i, 496.
- and their chlorides and phenylurethanes** (KLAGES and HAEN), 1904, A., i, 497.
- Benzyl diethylsilicol** (KIPPING and HACKFORD), 1911, T., 140; P., 9.
- α -Benzyl dihydroberberine** (FREUND), 1904, A., i, 916.
- and its hydrochloride** (MERCK), 1907, A., i, 435.
- and its salts** (FREUND and BECK), 1905, A., i, 151.
- Benzyl dihydrocarvone and its oxime** (SZELINSKI), 1909, A., i, 246.
- Benzyl dihydropulegone and its oxime** (SZELINSKI), 1909, A., i, 246.
- 2-Benzyl-4-dihydroquinazolone** (BOGERT and GEIGER), 1912, A., i, 395.
- 3-Benzyl-4-dihydroquinazolone methiodide** (BOGERT and GEIGER), 1912, A., i, 511.
- 1-Benzyl-3:4-dihydroisoquinoline and its picrate and platinichloride** (PICTET and KAY), 1909, A., i, 514.
- Benzyl dihydrothymine, *p*-5-di-nitro-4-hydroxy-** (JOHNSON and DERBY), 1908, A., i, 1019.
- α -Benzyl- α -dimethylacetophenone and its oxime** (HALLER and BAUER), 1909, A., i, 655.
- Benzyl dimethylamine, *p*-hydroxy-, and its salts** (TIFFENEAU), 1911, A., i, 779.
- 2:3-di-hydroxy- and its hydrochloride** (DOUETTEAU), 1912, A., i, 620.
- 3:4-di-hydroxy-, and its hydrochloride** (TIFFENEAU), 1911, A., i, 973.
- Benzyl dimethylaminodimethylcarbinol and its benzoyl derivative, hydrochloride of** (RIEDEL), 1906, A., i, 632.
- Benzyl dimethylaminomethylcarbinol and its additive salts and benzoyl derivative** (FOURNEAU), 1905, A., i, 57.
- and its methochloride and salts** (FOURNEAU), 1907, A., i, 762.
- 1-Benzyl-2:3-dimethylbenziminazolium chloride, 4:7-di-nitro-6-hydroxy-** (MELDOLA and KUNTZEN), 1911, T., 2044.
- 1-Benzyl-2:3-dimethyl-6-benziminazolone, 4:7-di-nitro-** (MELDOLA and KUNTZEN), 1911, T., 2044.
- 3-Benzyl-4:7-dimethylcoumarin** (FRIES and KLOSTERMANN), 1908, A., i, 822.
- 9-Benzyl-2':10-dimethyl dihydronaphth-acridine** (FREUND and BODE), 1909, A., i, 515.
- δ -Benzyl- $\beta\zeta$ -dimethyl- $\Delta\beta\epsilon$ -heptadiene, δ -hydroxy-** (v. FELLEBERG), 1906, A., i, 567.
- 4-Benzyl-1:3-dimethylhydantoin, *p*-hydroxy-** (JOHNSON and NICOLET), 1912, A., i, 585.
- Benzyl dimethyl-*p*-phenylenediamine, *o*-cyano-, and its hydrochloride, picrate, and nitro-derivative, and *p*-cyano-, and its nitrosamine** (FISCHER and WOLTER), 1909, A., i, 639.
- Benzyl- $\alpha\beta$ -dimethylpropylsulphone** (POSNER and TSCHARNO), 1905, A., i, 279.
- 1-Benzyl-2:3-dimethyl-5-pyrazolone, and 4-nitro-, and 4-oximino-** (CURTIUS and SCHNEIDERS), 1912, A., i, 139,

- 3-Benzyl-2:5-dimethyltetrahydrofuran, 3-hydroxy- (DUPONT), 1912, A., i, 291.
- 3-Benzyl-1:4-dimethyluracil (HOEBEL), 1907, A., i, 558; (WHEELER and McFARLAND), 1909, A., i, 678.
- 1-Benzyl-3:4-dimethyluracil (HOEBEL), 1907, A., i, 558; (WHEELER and McFARLAND), 1909, A., i, 678.
- γ -Benzyl- α -dimethylvinylacetic acid. See δ -Phenyl- α -dimethyl- $\Delta\beta$ -pentenoic acid.
- Benzyl dioxindole (KOHN), 1910, A., i, 697.
- 2-Benzyl diphenyl, 4:4'-diamino-, and its hydrochloride (CARRÉ), 1909, A., i, 262.
- 3-Benzyl diphenyl, 4:4'-diamino- (CARRÉ), 1909, A., i, 339.
- β -Benzyl- β -diphenylmethylhydroxylamine (ANGELI, ALESSANDRI, and AIAZZO-MANCINI), 1911, A., i, 545.
- Benzyl dipropyl carbinol (AMOUROUX and MURAT), 1912, A., i, 415; (MURAT and AMOUROUX), 1912, A., i, 528.
- o*-Benzylene benzimidazole and its salts (THIELE and FALK), 1906, A., i, 751.
- o*-Benzylene dihydroquinazoline and its salts (GABRIEL), 1912, A., i, 392.
- Benzylene imide, new synthesis of, and its nitroso-derivative (ORLOFF), 1906, A., i, 420.
- 2-*o*-Benzylene-6-methylpyridine and its hydrate and additive salts (ERRERA and CASARDI), 1905, A., i, 446.
- 2-*o*-Benzylene-6-methylpyridine and its oxime (ERRERA and CASARDI), 1905, A., i, 446.
- Benzylethanetetracarboxylic acid, *p*-nitro-, methyl ester (BISCHOFF), 1907, A., i, 776.
- Benzylethenylamidine, *tetrachloro*- (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 444.
- Benzylethylacetic acid. See β -Phenyl- α -ethylpropionic acid.
- Benzylethylamine telluri-fluoride and chloride (GUTBIER, FLURY, and EWALD), 1912, A., i, 689.
- 5-Benzylethylamino-2-benzeneazophenetole-, phenol and -4-*p*-tolueneazophenol (BÜLOW and SPROESSER), 1908, A., i, 583.
- 5-Benzylethylamino-2:4-bis-benzeneazophenol and -*p*-tolueneazophenol (BÜLOW and SPROESSER), 1908, A., i, 583.
- 7-Benzylethylamino-4-mono- and -3:4-di-methylcoumarins (BÜLOW and SPROESSER), 1908, A., i, 272.
- 5-Benzylethylamino-2- α -naphthaleneazophenol (BÜLOW and SPROESSER), 1908, A., i, 583.
- Benzylethyl-*m*-aminophenol, preparation of, and its salts and ethyl ether, and condensation of, with esters of 1:3-ketocarboxylic acids (BÜLOW and SPROESSER), 1908, A., i, 272.
- primary bisazo-compounds of (BÜLOW and SPROESSER), 1908, A., i, 583.
- 5-Benzylethylamino-2-*p*-sulphobenzeneazophenol and -2-*p*-tolueneazophenol (BÜLOW and SPROESSER), 1908, A., i, 583.
- Benzylethylammonium platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), 1911, A., i, 33.
- iridichloride (GUTBIER and LINDNER), 1909, A., ii, 1026.
- nitrite (RAY and DATTA), 1912, P., 258.
- Benzylethylaniline (GNEHM), 1905, A., i, 273; (VAUBEL and SCHEUER), 1905, A., i, 274.
- and its nitro- and nitroso-derivatives and their additive salts (SCHULTZ, ROHDE, and BOSCH), 1904, A., i, 992.
- Benzylethylaniline, *m*-amino-, acetyl derivative of, and *p*-hydroxy- (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- Benzylethylanilinesulphonic acid and its salts and nitroso-derivative (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- Benzylethylanilinophenylthiocarbamide (SCHULTZ, ROHDE, and BOSCH), 1904, A., i, 994.
- p*-Benzyl-*o*-ethylanisole (MARSHALK), 1910, A., i, 500.
- Benzylethyl-*n*- and -*isobutyl*amines (WEDEKIND and NEY), 1912, A., i, 502.
- Benzylethyl-*n*-butylammonium-acetic acid iodide, *l*-menthyl ester (WEDEKIND and NEY), 1912, A., i, 502.
- Benzylethyl-*isobutyl*silicol and its chloride and oxide, synthesis of (LUFF and KIPPING), 1908, T., 2006; P., 224.
- Benzylethylconinium ferrichloride (SCHOLTZ), 1910, A., i, 97.
- iodides, isomeric (SCHOLTZ), 1905, A., i, 296.
- Benzylethyl dipropylsilicane and its sulphonation (MARSDEN and KIPPING), 1908, T., 198; P., 12.
- Benzylethyl disulphonemethane (POSNER and HAZARD), 1903, A., i, 243.
- Benzyl ethyl ketone and its semicarbazone (TIEFFENEAU), 1907, A., i, 406.

- Benzyl ethyl ketone**, cyano- (*propionylbenzyl cyanide*), preparation and reactions of (DIMROTH and FEUCHTER), 1903, A., i, 629.
- Benzyl-*o*-ethylphenol** (MARSHALK), 1910, A., i, 500.
- as*-Benzylethyl-*p*-phenylenediamine** and its acyl derivatives and azo-dye from (SCHULTZ, ROHDE, and BOSCH), 1904, A., i, 994.
- sulphate of (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- 1-1-Benzyl-1-ethyl-2- and -3-pipecolinium salts** (SCHOLTZ), 1908, A., i, 679.
- Benzylethylpropylacetamide** (DUMESNIL), 1911, A., i, 719.
- Benzylethylpropylacetophenone** (DUMESNIL), 1911, A., i, 719.
- Benzylethyl-*n*- and -*iso*-propylamines** (WEDEKIND and NEY), 1912, A., i, 502.
- Benzylethyl-*n*-propylammonium-acetic acid iodide**, *l*-menthyl ester (WEDEKIND and NEY), 1912, A., i, 502.
- Benzylethylpropylisobutylsilicane**, preparation of (KIPPING and DAVIES), 1909, T., 73 ; P., 9.
- dl*-Benzylethylpropylisobutylsilicane-sulphonic acid**, and its salts and experiments on its resolution (KIPPING and DAVIES), 1909, T., 69 ; P., 9.
- Benzylethylpropylcarbinol** (DAVIES and KIPPING), 1911, T., 298.
- Benzylethylpropylsiliccol** (KIPPING and HACKFORD), 1911, T., 141 ; P., 9.
- and its sulphonation (KIPPING), 1907, T., 726.
- synthesis of, and its sulphonation and the resolution of the *dl*-sulphonic derivative into its optically active components (KIPPING), 1907, T., 209 ; P., 9.
- Benzylethylpropylsilicoyl chloride** and its reactions (KIPPING), 1907, T., 722.
- oxide and its sulphonation (MARSDEN and KIPPING), 1908, T., 198 ; P., 12.
- Benzylethylsilicanediol** (ROBISON and KIPPING), 1912, T., 2161 ; P., 245.
- Benzylethylsilicon *d*ichloride** (KIPPING), 1907, T., 720.
- preparation of (LUFF and KIPPING), 1908, T., 2005.
- Benzylethylsilicone** (ROBISON and KIPPING), 1908, T., 439 ; P., 25.
- Benzylethylsulphone** (FROMM and DE SEIXAS PALMA), 1906, A., i, 819.
- 1-Benzyl-2-ethylthiol-4-methyldihydro-6-pyrimidone** (WHEELER and McFARLAND), 1909, A., i, 678.
- Benzylethyl-*p*-toluidine** and its picrate (WEDEKIND and OBERHEIDE), 1904, A., i, 733.
- α -Benzyl- α -ethylvaleric acid** (DUMESNIL), 1911, A., i, 719.
- tert*.-Benzylfenchol** (LEROIDE), 1909, A., i, 596.
- 3-(or 4)-Benzylfluorene** (FORTNER), 1903, A., i, 177.
- 9-Benzylfluorene** (THIELE and HENLE), 1906, A., i, 572.
- 9-Benzylfluorene alcohol** (ULMANN and V. WURSTENBERGER), 1906, A., i, 77.
- Benzylformazyl** (VOSWINCKEL), 1903, A., i, 773.
- Benzylfurfuraldehyde** and its oximes and phenylhydrazide (FENTON and ROBINSON), 1909, T., 1335 ; P., 193.
- Benzylglucoside**, α -amino- (IRVINE and HYND), 1912, P., 320.
- β -Benzylglucoside** (BOURQUELOT and BRIDEL), 1912, A., i, 790.
- β -Benzyl-*d*-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), 1911, A., i, 802.
- α -Benzylglutaconic acid**, ethyl ester (BLAND and THORPE), 1912, T., 886.
- cis*- and *trans*-semianilides (THOLE and THORPE), 1911, T., 2232.
- cis*- **α -Benzylglutaconic acid** and its silver salt and ethyl ester (THOLE and THORPE), 1911, T., 2228.
- β -Benzylglutaric acid** and its ethyl ester, anhydride, acid α -naphthylamide, and nitro-compound (VORLÄNDER and STRUNCK), 1906, A., i, 367.
- β -Benzylglutaric acid**, *aa'*-*dicyano*-, and its silver salt (HAWORTH), 1909, T., 484.
- β -Benzylglycerol $\alpha\gamma$ -diethyl ether** (SOMMELET), 1907, A., i, 108.
- iso*-Benzylglyoxalidone** and its acetyl derivative (FINGER and ZEH), 1910, A., i, 591.
- Benzylguloside** (BLANKSMA and ALBERDA VAN EKENSTEIN), 1908, A., i, 952.
- C*-Benzylharmine** and its hydrochloride (PERKIN and ROBINSON), 1912, T., 1784 ; P., 153.
- N*-Benzylhelicaldoxime** (SCHEIBER and KLOPPE), 1911, A., i, 382.
- δ -Benzylheptane** (AMOUROUX and MURAT), 1912, A., i, 415.
- and its nitroso-chloride (MURAT and AMOUROUX), 1912, A., i, 528.
- 9-Benzylhexahydroanthracene** (GODCHOT), 1907, A., i, 309 ; 1908, A., i, 16.
- γ -Benzylhexane** (DUMESNIL), 1911, A., i, 719.

- Benzylcyclohexylamine** and its formyl derivative (WALLACH), 1906, A., i, 160.
- 1-Benzylhydantoin**, 2-thio- (JOHNSON, PFAU and HODGE), 1912, A., i, 807.
- 4-Benzylhydantoin** (*phenylalaninehydantoin*) (WHEELER and HOFFMAN), 1911, A., i, 498.
- p*-ethylxanthate (JOHNSON and BRAUTLECHT), 1912, A., i, 805.
- 4-Benzylhydantoin**, *p*-amino-, and *p*-nitro-, and salts of the former (JOHNSON and BRAUTLECHT), 1912, A., i, 805.
- 4-m-bromo-*p*-hydroxy-** (JOHNSON and BENGIS), 1912, A., i, 810.
- 3:5-dibromo-*p*-hydroxy-, and 3:5-diiodo-*p*-hydroxy-** (JOHNSON and HOFFMAN), 1912, A., i, 136.
- 3:5-dichloro-*p*-hydroxy-** (WHEELER, HOFFMAN, and JOHNSON), 1911, A., i, 923.
- p*-hydroxy-** (*tyrosinehydantoin*) (WHEELER and HOFFMAN), 1911, A., i, 499.
- Blendermann's, synthesis and formation of (DAKIN), 1910, A., ii, 796.
- thio-** (JOHNSON and BRAUTLECHT), 1912, A., i, 805.
- 2-thio-, and its 3-acetyl derivative** (JOHNSON and O'BRIEN), 1912, A., i, 806.
- 1-Benzylhydrastinine hydrochloride** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 1015.
- Benzylhydrazine**, action of nitrous esters on, in alkaline solution (STOLLÉ), 1908, A., i, 917.
- Benzylhydrazine**, *m*-chloro-, hydrochloride (CURTIUS and WEWER), 1912, A., i, 311.
- nitroso-, benzoyl- and benzenesulphonyl-derivatives of** (THIELE), 1910, A., i, 889.
- 2-Benzylhydrindene**, 1:2'-*di*hydroxy- (PERKIN and ROBINSON), 1907, T., 1089.
- 1-Benzylhydrocrotarnine** and its hydriodide (FREUND and REITZ), 1906, A., i, 601.
- α -Benzylhydrohydrastinine** and its salts (FREUND and LEDERER), 1911, A., i, 907.
- β -Benzylhydroxylamine**, interaction of, with ketones (SCHEIBER), 1908, A., i, 763; (SCHEIBER and BRANDT), 1908, A., i, 764.
- Benzylhydroxylaminotribromo-*o*-benzoquinone** (HANTZSCH and GLOVER), 1907, A., i, 1055.
- Benzyl- β -hydroxypropylmalonic acid** and its silver salt (JOHNSON and HILL), 1911, A., i, 503.
- Benzyl *o*-hydroxystyryl ketone** (HOUBEN), 1904, A., i, 335.
- Benzylidene chloride**, pyrogenetic decomposition of, by the electric current (LÖB), 1903, A., i, 806.
- action of sodium naphthoxide on** (MACKENZIE and JOSEPH), 1904, T., 793; P., 124.
- 2:3:4-trichloro-** (NICODEMUS), 1911, A., i, 346.
- and iodide, *o*-nitro-** (REISSERT), 1907, A., i, 1104.
- m*-nitro-, action of solutions of ethoxides on** (KLIEGL), 1912, A., i, 268.
- diacetate, 2-chloro-4-amino-, acetyl derivative** (BLANKSMA), 1909, A., i, 936.
- o*-nitro-** (BAKUNIN and PARLATI), 1906, A., i, 664.
- dipropionate and dibenzoate, and *o*-, *m*-, and *p*-nitro-, dibenzoates** (WEGSCHEIDER and SPÄTH), 1910, A., i, 155.
- Benzylidene bases**, electrolytic reduction of (LAW), 1911, P., 310; 1912, T., 154; (BRAND and HÖING), 1912, A., ii, 895.
- Benzylideneacetazine** (KNÖFFER), 1909, A., i, 188.
- Benzylideneacetoacetic acid**, ethyl ester, action of benzamidine on (RUHEMANN), 1903, T., 374, 719; P., 50, 128.
- and *m*-nitro-, ethyl esters, action of bases on** (RUHEMANN and WATSON), 1904, T., 1177.
- and benzylidenebisacetoacetic acid, menthyl esters, rotation of** (HANN and LAPWORTH), 1904, T., 54.
- Benzylideneacetoguanamine** and its salts and dibenzoyl derivative (HUMNICKI), 1907, A., i, 656.
- Benzylideneacetone**. See Styryl methyl ketone.
- Benzylideneacetophenone**. See Phenyl styryl ketone.
- Benzylideneacetylacetone**, action of bases on (RUHEMANN and WATSON), 1904, T., 459, 1174; P., 48, 175.
- action of hydrogen sulphide on** (RUHEMANN), 1905, T., 25.
- and *m*-nitro-, and the action of benzamidine on** (RUHEMANN), 1903, T., 1373; P., 246.
- Benzylideneacetylketophenylparacone**. See Ketobenzylideneacetylphenylparacone.

- Benzylideneacetylpyrrocoline**(SCHOLTZ), 1912, A., i, 649.
- Benzylideneacetylpyruvic acid** and its derivatives (MUMM and BERGELL), 1912, A., i, 937.
- 5-Benzylidene-3-allylrhodanic acid** and *o*-hydroxy- and *o*-nitro- (ANDREASCH and ZIPSER), 1903, A., i, 856.
- Benzylidene- α -amines**, action of magnesium organic compounds on (BUSCH and LEEFHELM), 1908, A., i, 153.
- o*-Benzylideneaminoacetanilide** (BRAND and STOHR), 1907, A., i, 101.
- Benzylideneaminoacetone**, and the action of acids on (RUHEMANN), 1903, T., 378; P., 50.
- Benzylideneaminoacetyldiglycylglycinebenzylidenehydrazine** (CURTIUS), 1904, A., i, 477.
- 4-Benzylideneamino-2-acetyl- α -naphthol** (TORREY and CARDARELLI), 1911, A., i, 68.
- Benzylideneamino- α -alkylcinnamic acids**, substituted esters, relation between constitution of and capacity for forming liquid crystals (VORLÄNDER and KASTEN), 1908, A., i, 641.
- Benzylidene-2-aminoanthraquinone** and its *o*-hydroxy- and nitro-derivatives (KAUFLER), 1904, A., i, 208.
- o*-Benzylideneaminobenzoic acid** (v. PAWLEWSKI), 1904, A., i, 317.
- p*-Benzylideneaminobenzoic acid**, and *o*- and *p*-hydroxy-, and their esters (MANCHOT and FURLONG), 1910, A., i, 33.
- Benzylideneaminocinnamic acid**, *p*-cyano-, amyl ester, optical investigation of (STUMPF), 1910, A., ii, 809; 1912, A., ii, 336.
- Benzylidene-6-aminocoumarin** (MORGAN and MICKLETHWAIT), 1904, T., 1234; P., 177.
- 4-Benzylideneamino-*m*-cresol** (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1910, A., i, 28.
- 2-Benzylideneaminodihydro-6-pyrimidone** (JOHNSON and JOHNS), 1906, A., i, 114.
- 5-Benzylideneamino-2:6-diketo-1:3-dimethyltetrahydropyrimidine**, 4-amino- and 4-amino-2'-hydroxy- (TRAUBE and NITHACK), 1906, A., i, 214.
- 5-Benzylideneamino-2:6-diketo-3-methyltetrahydropyrimidine**, 4-amino- (TRAUBE and NITHACK), 1906, A., i, 214.
- p*-Benzylideneaminodimethylaniline** and its hydrochlorides (MOORE and GALE), 1908, A., i, 369.
- 4-Benzylideneamino-3:5-dimethylpyrazole**, nitro- and *p*-nitro- α -cyano-derivatives and their 1-aryl and 1-carbamyl derivatives (SACHS and ALSLEBEN), 1907, A., i, 356.
- 1-Benzylideneamino-3:4-dimethyl-1:2:5-triazole** (v. PECHMANN and BAUER), 1909, A., i, 271.
- 1-Benzylideneamino-2:5-dimethyl-1:3:4-triazole**, *m*-nitro- (PELLIZZARI), 1909, A., i, 535.
- 4-Benzylideneamino-1:5-diphenyl-3-methylpyrazole**, *p*-nitro- α -cyano-, and its 1-*p*-bromo-derivative (SACHS and ALSLEBEN), 1907, A., i, 358.
- 5-Benzylideneamino-2-ethylthiol-6-pyrimidone** (JOHNSON), 1905, A., i, 836.
- 3-Benzylideneamino-2-methyl-4-quinazalone** (BOGERT and GORTNER), 1909, A., i, 679.
- Benzylideneamino-1-methyltetrahydroquinazoline-2:4-dione**, and *o*-hydroxy- (KUNCKELL), 1910, A., i, 439.
- 1-Benzylideneamino-5-methyltriazole** (WOLFF and HALL), 1904, A., i, 120.
- Benzylidene-4-amino- α -naphthol**, *p*-nitro- (POPE), 1908, T., 536.
- Benzylidene-1-amino- β -naphthol**, *p*-nitro-, hydrochloride of (POPE and FLEMING), 1908, T., 1918.
- Benzylideneamino- α - and - β -naphthols**, 2:4-dinitro-, and their derivatives (SACHS and BRUNETTI), 1907, A., i, 756.
- Benzylidene-*p*-aminophenol**, hydrochloride, and *o*- and *p*-nitro-, and their hydrochlorides (POPE and FLEMING), 1908, T., 1915.
- Benzylidene-*p*-aminophenol**, 3-chloro- (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1910, A., i, 28.
- Benzylidene-*o*- and -*p*-aminophenols**, and *m*- and *p*-nitro- (POPE), 1908, T., 533; P., 24.
- 4-Benzylideneamino-1-phenol-2-sulphonic acid**, potassium salts (BAUER), 1909, A., i, 470.
- Benzylidene-*p*-aminophenyl benzoate** (WOHL and GOLDENBERG), 1904, A., i, 210.
- α -Benzylideneamino- α -phenylacetamide** (CLARKE and FRANCIS), 1911, T., 320; P., 22.
- Benzylidene-*p*-aminophenylarsinic acid**, *p*-hydroxy- (KURATORIUM DER GEORG und FRANZISKA SPEYER'SCHEN STUDIENSTIFTUNG), 1908, A., i, 747.
- Benzylideneaminophenyl-carbamide**, -cyanamide, and -thiocarbamide (PELLIZZARI), 1907, A., i, 874.

- Benzylideneaminophenylcyanamide**, nitro- (ROLLA), 1907, A., i, 875.
- 4-Benzylideneamino-1-phenyl-2:3-dimethyl-5-pyrazolone**, *p*-nitro- α -cyano- (SACHS and ALSLEBEN), 1907, A., i, 359.
- 4-Benzylideneamino-5-phenyl-3-methylpyrazole**, *op*-dinitro- and *m*-nitro- α -cyano-, and its 1-carbamyl derivative (SACHS and ALSLEBEN), 1907, A., i, 358.
- 1-Benzylideneamino-2-phenyl-2:3-naphthaglyoxaline**, and its additive salts and *o*-hydroxy- and *o*-nitro-derivatives (FRANZEN), 1906, A., i, 707.
- Benzylidene-5-aminosalicylic acid**, *p*-nitro- (POPE), 1908, T., 534.
- 3-Benzylideneamino-2-styryl-4-quinazalone**, and its hydrochloride and 6- and 7-amino-, diacetyl derivatives (BOGERT, BELL, and AMEND), 1911, A., i, 162.
- 3-Benzylideneaminotetrahydroquinazoline-2:4-dione**, and its potassium salt (KUNCKELL), 1910, A., i, 439.
- Benzylidene-5-amino-1:2:4-triazole** (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 361.
- Benzylideneanhydroacetonebenzil**, isomeride of (GRAY), 1909, T., 2143.
- Benzylideneaniline** (RUHEMANN and WATSON), 1904, T., 466; P., 48; (VAUBEL and SCHEUER), 1905, A., i, 274.
- condensation of, with aromatic amines and phenols (MAYER), 1904, A., i, 784.
- additive products of, with ethyl acetoacetate and ethyl methylacetoacetate (FRANCIS and TAYLOR), 1904, T., 998; P., 113.
- condensation of, with ethyl acetone-dicarboxylate (MAYER), 1905, A., i, 429.
- condensation of, with ketones (MAYER), 1905, A., i, 214, 357.
- condensation of, with α -ethylenic ketones (MAYER), 1904, A., i, 832.
- behaviour of magnesium organo-compounds towards (BUSCH), 1904, A., i, 663; (BUSCH and RINCK), 1905, A., i, 519.
- hydrocyanide, condensation of, with benzylideneacetophenone and with carvone (CLARKE and LAPWORTH), 1907, T., 699; P., 90.
- picrate (CIUSA), 1906, A., i, 962.
- anhydrosulphite and hydrogen sulphite (MAYER), 1912, A., i, 251.
- Benzylideneaniline**, 3:5-dibromo-4-amino-, 2:4:6- and 3:4:5-tribromo- (BLANKSMA), 1912, A., i, 932.
- Benzylideneaniline**, 4-bromo-2-nitro- and 4-chloro-2-nitro- (SACHS and SICHEL), 1904, A., i, 594.
- m*-chloro- (LAW), 1912, T., 161.
- a*-chloro-*p*-bromo-, preparation of (WHEELER and JOHNSON), 1903, A., i, 693.
- 2-chloro-5-nitro- (COHN and BLAU), 1904, A., i, 674.
- o*-hydroxy- and its *m'*- and *p'*-nitro-derivatives (POPE), 1908, T., 535; P., 24.
- and its *p'*-nitro-derivative, hydrochlorides of (POPE and FLEMING), 1908, T., 1916.
- 3:4-dihydroxy-, and its dimethyl ether (NOELTING), 1910, A., i, 177.
- trihydroxy- (GATTERMANN), 1908, A., i, 31.
- o*-iodo- (MAYER), 1911, A., i, 870.
- p*-iodo- (ULLMANN), 1904, A., i, 728; (WILLGERODT and BOGEL), 1905, A., i, 901.
- 2:4-dinitro-, action of light on (SACHS and SICHEL), 1904, A., i, 156.
- 2:6-dinitro- (REICH and PINCZEWSKI), 1912, A., i, 361.
- trinitro- (SACHS and KANTOROWICZ), 1906, A., i, 909.
- Benzylideneanilineacetoacetic acid**, ethyl ester, preparation of (MORRELL and BELLARS), 1903, T., 1292; P., 209.
- ethyl esters, isomeric (RABE), 1903, A., i, 62; (SCHIFF; BILTZ), 1903, A., i, 172; (FRANCIS), 1903, A., i, 411.
- methyl esters, isomeric (TAYLOR), 1903, A., i, 412.
- Benzylideneanilineazobenzoic acid**. See Carboxybenzeneazobenzylideneaniline.
- Benzylidene-*o*-anisidine**, *p*-nitro-, and its hydrochloride (POPE and FLEMING), 1908, T., 1917.
- Benzylidene-*p*-anisidine** hydrochloride and *p*-nitro-, and its hydrochloride (POPE and FLEMING), 1908, T., 1915.
- Benzylidene-*p*-anisidine**, *o*-hydroxy- (HANTZSCH and WECHSLER), 1903, A., i, 211.
- Benzylidene-*p*-anisidine-2-sulphonic acid**, potassium salt (BAUER), 1909, A., i, 470.
- Benzylideneanisylidenecyclopentanones**, stereoisomeric, preparation of (STOBBER), 1909, A., i, 309.
- Benzylideneanthranilic acid**, and *m*-, and *p*-hydroxy-, 3:4-dihydroxy-, and *o*-, *m*-, and *p*-nitro- (WOLF), 1910, A., i, 736.
- p*-amino- and *p*-nitro- (v. PAWLEWSKI), 1905, A., i, 438.

- Benzylideneanthranilic acids**, action of acetic anhydride on (EKELEY and DEAN), 1912, A., i, 211.
- Benzylideneanthraquinonyl-1-hydrazone**, and its acetyl derivative, and *o*-, and *p*-hydroxy-, and *o*-, *m*-, and *p*-nitro- (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 704.
- Benzylideneanthraquinonyl-2-hydrazone**, and *o*-, and *p*-hydroxy-, 2:3-dihydroxy-, and *p*-nitro- (MÖHLAU, VIERTEL, and REINER), 1912, A., i, 705.
- Benzylideneanthratriquinonehomosalicylic acid**, pentabromohydroxy-, and *pentaiodohydroxy*-, and the potassium salt of the latter (CLEMMENSEN and HEITMAN), 1911, A., i, 543.
- Benzylideneanthrone** and *m*-nitro- (HALLER and PADOVA), 1906, A., i, 24.
- Benzylidenearabinamine** (ROUX), 1903, A., i, 463.
- Benzylideneazaine**, action of nitrites and nitrosyl chloride on (FRANZEN and ZIMMERMANN), 1907, A., i, 661.
compound of, with trinitrotoluene and its picrate (CIUSA), 1906, A., i, 962.
- Benzylideneazaine**, *p*-bromo-, and *m*-chloro- (CURTIUS, MELSBAACH, and RISSON), 1910, A., i, 509.
- Benzylideneazaine**, action of ammonia on (*tetrabromo*-), 1905, A., i, 249.
o-, *m*-, and *p*-iodo- (WILLGERODT and RIEKE), 1905, A., i, 442.
- Benzylidene-*o*'*m*-azotoluene-4-hydrazone**, and *o*-hydroxy-, and *p*-nitro- (TRÖGER and WESTERKAMP), 1910, A., i, 207.
- Benzylidenebenzhydrazideoxime** (WIELAND), 1909, A., i, 885.
- Benzylidenebenzhydrazylhydrazone** (DARAPSKY), 1903, A., i, 368.
- Benzylidenebenzidine**, *o*-, *m*-, and *p*-iodo- (WILLGERODT and RIEKE), 1905, A., i, 447.
trinitro- (SACHS and KANTOROWICZ), 1906, A., i, 909.
- Benzylidene-*p*-benzoquinone**, *tetrabromohydroxy*- and *tetrachlorohydroxy*- (ZINCKE and BIRSCHER), 1908, A., i, 782.
hexabromohydroxy-, and ψ -*hexabromochlorohydroxy*-, and its metallic salts (ZINCKE and KRÜGENER), 1904, A., i, 402.
- Benzylidenebenzoylactic acid**, ethyl ester, and its dibromo-derivative (BERTINI), 1904, A., i, 167.
and *m*-nitro-, preparation of, and action of benzamidine on (RUHEMANN), 1903, T., 720; P., 128.
- Benzylidenebenzoylacetone** (KNOEVENAGEL and ERLER), 1903, A., i, 637.
action of ammonia, phenylhydrazine, and semicarbazide on (RUHEMANN and WATSON), 1904, T., 460; P., 48.
compound of, with benzamidine, and its *m*-nitro-derivative (RUHEMANN), 1903, T., 1376; P., 246.
pyridine derivatives from (KNOEVENAGEL, ERLER, and REINECKE), 1903, A., i, 652.
- Benzylidenebenzyl cyanide**. See *α*-Phenylcinnamonitrile.
- trans*-**Benzylidenebenzylamine** (v. PAWLIEWSKI), 1912, A., i, 182.
- Benzylidenebisacetoacetic acid**, ethyl ester, action of phenylhydrazine on (KNOEVENAGEL and HEEREN), 1903, A., i, 660.
- Benzylidenebisacetoacetic acid**, *p*-nitro-, esters of the tautomeric forms of (RABE and BILLMANN), 1904, A., i, 750.
- Benzylidenebisacetylacetone** (RUHEMANN and WATSON), 1904, T., 1176; P., 175.
- Benzylidenebisbenzoylactic acid**, esters (BERTINI), 1904, A., i, 167.
m-nitro-, ethyl esters (RUHEMANN), 1903, T., 717, 1372; P., 128.
- Benzylidenebisbenzoylacetone** (RUHEMANN), 1903, T., 1376; P., 246.
- Benzylidenebisbenzoylacetones**, α - and β - (KNOEVENAGEL and ERLER), 1903, A., i, 637.
- Benzylidenebisdiazomethane**, *m*-nitro- (RUHEMANN), 1906, T., 1273.
- Benzylidene-bis-2':4'-diethoxyacetophenone**, 2-hydroxy- (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- Benzylidenebisdihydropyrococline** (SCHOLTZ), 1912, A., i, 386.
- Benzylidenebis-4-hydroxy-7-methylcoumarin** (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.
- Benzylidenebis-*o*-methoxybenzamide** (KEANE and NICHOLLS), 1907, T., 268; P., 36.
- Benzylidenebisphenylanilinoacetamide** (MINOVICI and ZENOVICI), 1912, A., i, 700.
- Benzylidenebisphenylchloroacetamide** (MINOVICI and ZENOVICI), 1912, A., i, 700.
- Benzylidenebis-1-phenyl-3-methyl-5-pyrazolone**, 2:5-dichloro-6-nitro- (MICHAELIS and ZILG), 1906, A., i, 217.
- 4-Benzylidenebis-1-phenyl-3-methyl-5-pyrazolone** (BETTI), 1906, A., i, 985.

- 4-Benzylidenebis-1-phenyl-3-methyl-5-pyrazolone, *o*-hydroxy- (BETTI and MUNDICI), 1906, A., i, 544.
- 4,4'-Benzylidenebis-1-phenyl-3-methyl-5-pyrazolone, *o*-nitro- (HEIDUSCHKA and ROTHACKER), 1912, A., i, 52.
- Benzylidenebisphenylphenylhydrazinoacetamide (MINOVICI and ZENOVICI), 1912, A., i, 700.
- Benzylidene-*o*-bromoaniline, *o*- and *p*-hydroxy- (FISCHER and NEBER), 1912, A., i, 438.
- Benzylidene-*p*-bromophenylhydrazine, *m*-nitro- (OTT), 1905, A., i, 376.
- Benzylidene-2:6-*di*bromoquinone (ZINCKE and WALTER), 1904, A., i, 1005.
- syn*-Benzylidene-5-bromosalicylamide (HUGHES and TITHERLEY), 1910, P., 344; 1911, T., 26.
- 5-Benzylidene-3-*isobutyl*rhodanine and 5-*o*-, and *m* hydroxy- (NÄGELE), 1912, A., i, 795.
- α -Benzylidenebutiric acid and its salts, amides, and chloride (FICHTER and ALBER), 1907, A., i, 86.
- Benzylidenecamphor, *o*-, *m*-, and *p*-hydroxy-, preparation of (HALLER and BAUER), 1909, A., i, 595.
- 2-, 3-, and 4-nitro- (WOOTTON), 1910, T., 411.
- d*-Benzylidenecamphor and its haloid derivatives (HALLER and MINGUIN), 1903, A., i, 267; (MINGUIN), 1903, A., i, 428.
- Benzylidenecarbamidoxime, properties of, and action of water on (CONDUCHÉ), 1906, A., i, 593.
- and its nitro-derivatives (CONDUCHÉ), 1908, A., i, 155.
- Benzylidene-*o*-chloroaniline, and *o*- and *p*-hydroxy-, and *o*- and *p*-nitro- (FISCHER and NEBER), 1912, A., i, 438.
- syn*-Benzylidene-5-chlorosalicylamide (TITHERLEY and HUGHES), 1910, T., 1376; P., 175.
- Benzylidenecinnamylidenemethyl ketone. See Styryl cinnamylidenemethyl ketone.
- Benzylidene- α -cinnamylidenemethyl ketonehydroxylamineoxime (CIUSA and TERNI), 1911, A., i, 918.
- Benzylidene- ψ -codeinone and its methiodide (KNORR and HÖRLEIN), 1907, A., i, 789.
- Benzylidenecoumaranone, *o*-nitro- (STOERMER and ATENSTÄDT), 1903, A., i, 41.
- Benzylideneisocoumaranone (CZAPLIŃSKI, V. KOSTANECKI, and LAMPE), 1909, A., i, 236.
- Benzylidenecoumaranones, conversion of, into flavonols (AUWERS and MÜLLER), 1909, A., i, 45.
- 5-Benzylidene-3- ψ -cumylrhodanic acid, and 5-*m*- and *p*-nitro- (KALUZA), 1910, A., i, 130.
- Benzylidenecyanoacetamide, 3:4-*di*hydroxy- (PICCININI), 1904, A., i, 920.
- o*-nitro- (ISSOGGIO), 1904, A., i, 526.
- Benzylidenedehydracetic acid (HALE), 1911, A., i, 722.
- Benzylidenedehydracetocarboxylic acid (HALE), 1911, A., i, 722.
- Benzylidenedeoxybenzoin, *m*-nitro-, hydrochloride (RUHEMANN), 1903, T., 1378; P., 247.
- o*-, *m*-, and *p*-nitro-, and their isomerides and derivatives (STOBBE and WILSON), 1910, A., i, 624.
- Benzylidenedeoxybenzoins, isomeric, and their *o*-chloro-derivatives and phenylhydrazones (KLAGES and TETZNER), 1903, A., i, 100.
- Benzylidenediacetamide, *N*-dichloro- (CHATTAWAY and SWINTON), 1912, T., 1206; P., 158.
- Benzylidenediacetoneamine. See 6-Phenyl-2:2-dimethylpiperidone.
- Benzylidenediacetyl. See Styryl methyl diketone.
- Benzylidene-diamides, *N*-chloro-derivatives of (CHATTAWAY and SWINTON), 1912, T., 1206; P., 158.
- Benzylidenedibenzamide, *N*-chloro- (CHATTAWAY and SWINTON), 1912, T., 1208; P., 158.
- Benzylidenedibenzyl ketone. See $\alpha\gamma$ -Triphenyl- $\Delta\gamma$ -butylene- β -one.
- Benzylidenedi-ethyl- and -methyl-diisocarbamides (BRUCE), 1904, A., i, 573.
- 4-Benzylidene-1:3-diethylhydantoin (JOHNSON and NICOLET), 1912, A., i, 808.
- Benzylidenediformamide, *o*-nitro- (RIEDEL), 1907, A., i, 254.
- Benzylidenedihermaline (PERKIN and ROBINSON), 1912, T., 1786.
- Benzylidenedimalonic acid, ethyl ester (KÖTZ and STALMANN), 1903, A., i, 741.
- and *o*-nitro-, methyl esters (MEERWEIN), 1908, A., i, 546.
- Benzylidenedimalonic acid, *m*-amino-, ethyl ester, and *m*-nitro- and its ethyl ester, and *p*-nitro-, ethyl ester (KÖTZ), 1907, A., i, 708.
- Benzylidene-*p*-dimethylaminoacetophenone. See *p*-Dimethylaminophenyl styryl ketone,

- Benzylidene-*p*-dimethylaminophenyl- ψ -thiohydantoin**, *p*-nitro- (WHEELER and JAMIESON), 1903, A., i, 522.
- Benzylidenedimethylethylenedihydrazine**, *di-p*-nitro-, and its hydrochloride (BACKER), 1912, A., i, 731.
- δ -Benzylidene- β - δ -dimethyl- Δ -heptadiene** (V. FEILENBERG), 1906, A., i, 568.
- α -Benzylidene- γ -dimethylparaconic acid**, *p*-chloro- (STOBEE and WAHL), 1911, A., i, 374.
- Benzylidenedimethyl- α -pyridyl ketone** and its salts (C. and A. ENGLER), 1903, A., i, 113.
- Benzylidenedioxyphenylpropionic acid ethylester**, isomeric of (DIECKMANN), 1910, A., i, 385.
- Benzylidene-dioxythiazole**, -rhodanic acid, and -thiohydantoin, *o*-hydroxy-, and their acetyl derivatives (ZIPSER), 1903, A., i, 273.
- Benzylidenediphenylbutanone**. See *acetyl-triphenyl- Δ -pentene- γ -one*.
- Benzylidene-2:5-diphenylsemicarbazide** (BUSCH and WALTER), 1903, A., i, 523.
- 5-Benzylidenediphenylthiohydantoin**, *o*-hydroxy- (ANDREASCH and ZIPSER), 1903, A., i, 857.
- Benzylidenediphloroglucinol hexamethyl ether** (V. KOSTANECKI and LAMPE), 1907, A., i, 74.
- Benzylidenedipyrrocoline** (SCHOLTZ), 1912, A., i, 386.
- Benzylidene-dithiolacetic acid** and its ethyl ester and salts and -di- α -thiolpropionic acid (HOLMBERG and MATTISSON), 1907, A., i, 475.
- Benzylidenedivanillin dimethyl ether**, *m*- and *p*-nitro-, and their derivatives (ROGOFF), 1904, A., i, 173.
- Benzylidenedulcitol**, nitro-derivatives of (SIMONET), 1903, A., i, 633.
- γ -Benzylidene- β -ethylbutyrophenone**. See β -Styryl- β -ethylpropiofenone.
- 4-Benzylidene-1-ethylhydantoin** (JOHNSON and NICOLET), 1912, A., i, 808.
- 9-Benzylidene fluorene** (ULLMANN and V. WURSTEMBERGER), 1906, A., i, 77.
and its dibromide and picrate (THIELE and HENLE), 1906, A., i, 571.
- 4-Benzylidene-3-furyl-5-pyrazolone** (TORREY and ZANETTI), 1910, A., i, 892.
- Benzylidenegalactamine** (ROUX), 1903, A., i, 73.
- Benzylidenegallacetophenone**, 3:4-di-hydroxy-, methylene ether of, and its triacetyl derivative (RUPE and VEIT), 1906, A., i, 435.
- Benzylidene-*mono*- and di-gallacetophenones**, nitro-derivatives and their acetyl compounds (RUPE and VEIT), 1906, A., i, 435.
- β -Benzylideneglutaric acid** and its anhydride, anil, and salts (MÜLLER), 1906, A., i, 960.
- Benzylideneglycol**, dihydroxy-, carbonate diacetate (PAULY and ALEXANDER), 1909, A., i, 590.
- Benzylideneguanylcabamide** and its picrate (OSTROGOVICH), 1909, A., i, 461.
- Benzylideneharmine** and its salts and *p*-nitro- (PERKIN and ROBINSON), 1912, T., 1782; P., 153.
- Benzylidene- $\Delta^{1:5}$ -cyclohexadienol** (KÖTZ and GRETHE), 1910, A., i, 24.
- Benzylidenecyclohexanone** and the action of hydroxylamine on (WALLACH), 1907, A., i, 220.
- 5-Benzylidene-3-isohexylrhodanic acid**, and 5-*m*- and *p*-nitro-, and 5-*o*-hydroxy- (KALUZA), 1910, A., i, 131.
- Benzylidenehippuric acid**, *m*-hydroxy-, and its ethyl ester, and piperidide (ERLENMEYER and WITTENBERG), 1905, A., i, 240.
- Benzylidenehydantoin**, aluminium compound of, and 3:5-dichloro-4-hydroxy-, and its ammonium salt and *p*-nitro- (WHEELER and HOFFMAN), 1911, A., i, 499.
 α -bromo-, α -chloro-, and α -thio- (WHEELER, HOFFMAN, and JOHNSON), 1911, A., i, 923.
- 4-*m*-bromo-*p*-hydroxy-** (JOHNSON and BENGIS), 1912, A., i, 810.
- 3:5-di-bromo-4-hydroxy-**, and its ammonium salt (JOHNSON and HOFFMAN), 1912, A., i, 137.
- Benzylidenehydrazine**, acetyl and benzoyl derivatives, metallic compounds of (STOLLÉ and MÜNCH), 1905, A., i, 94.
- Benzylidenehydrazine**, *o*-amino-, *m*- and *p*-hydroxy-, and their derivatives (FRANZEN and EICHLER), 1910, A., i, 700.
o-aminobenzoyl derivative (CURTIUS, MELSBAUGH, and RISSOM), 1910, A., i, 509.
m-nitro-, and its reactions (STOLLÉ), 1907, A., i, 496.
- Benzylidenehydrazines**, *o*-amino-, acetyl derivatives of (RONCAGLIOLO), 1905, A., i, 652.
- Benzylidenehydrazino-oxalic acid** (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 452.
- dl*- and *d*-2-Benzylidenhydrindamine**, 1-hydroxy- (POPE and READ), 1912, T., 763.

- 2-Benzylidene-1-hydrindone**, 2'-hydroxy-, and its potassium and acyl derivatives and **sulphonic acid** (PERKIN and ROBINSON), 1906, P., 160; 1907, T., 1087.
- 2':4'-*di*hydroxy-, and its hydrochloride (PERKIN and ROBINSON), 1907, T., 1092.
- Benzylidenehydroxydihydrophenanthranil** (JAPP and KNOX), 1905, T., 683.
- Benzylidene-*p*-hydroxylaminoacetanilide** (BRAND and STÖHR), 1909, A., i, 564.
- Benzylidene-*p*-hydroxylaminophenyl benzoate** (WOHL and GOLDENBERG), 1904, A., i, 210.
- Benzylideneindigotin** (HELLER and MICHEL), 1903, A., i, 835.
- 2-Benzylideneindoxyl**, *o*-amino-, and *o*-nitro- (NOELTING and STEUER), 1911, A., i, 165.
- 8-Benzylidenelævulic acid** from cinnamylidenepyruvic acid (ERLENMEYER), 1904, A., i, 500.
- and its ethyl ester (MAYER), 1905, A., i, 357.
- Benzylidenelepidine**. See 4-Styrylquinoline.
- Benzylidenemalonic acid**, ethyl ester, action of benzamidine on (RUHEMANN), 1903, T., 374; P., 50.
- reactions of, with magnesium organic compounds (KÖHLER), 1905, A., i, 700.
- ethyl hydrogen ester (REINICKE), 1905, A., i, 787.
- Benzylidenemalonic acid**, *m*-nitro-, ethyl ester (KÖTZ), 1907, A., i, 708.
- and the action of benzamidine on (RUHEMANN), 1903, T., 723; P., 129.
- Benzylidenemalononitrile**, *o*-hydroxy- (HINRICHSSEN and LOHSE), 1905, A., i, 132.
- Benzylidenemalonyl chloride** and its additive compound with pyridine (STAUDINGER and OTT), 1911, A., i, 640.
- Benzylidenemannitol**, nitro-derivatives of (SIMONET), 1903, A., i, 633.
- 2-Benzylidenementhadiene** (KLAGES), 1907, A., i, 599.
- Benzylidenementhonehydroxylamine**. See Benzylmenthone, α -hydroxylamino-.
- Benzyl-mercaptals** and -mercaptols, *p*-nitro- (SCHAEFFER and MURUA), 1907, A., i, 609.
- Benzylidene-meride** and -merimidine (FELS), 1904, A., i, 618.
- Benzylidenemethylamine**, *o*-amino- (GABRIEL and COLMAN), 1904, A., i, 1061.
- Benzylidene-2-methylbenziminazole**. See Styrylbenziminazole.
- γ -Benzylidene- β -methylbutyric acid** (REIMER), 1907, A., i, 853.
- δ -Benzylidene- β -methyl- α -diethyl- δ -crotonyl alcohol** (REIMER and REYNOLDS), 1912, A., i, 770.
- 9-Benzylidene-10-methyl-9:10-dihydroacridine** (DECKER and HOCK), 1904, A., i, 620; (DECKER and PSCHORR), 1904, A., i, 926.
- 1-Benzylidene-2-methyl-1:2-dihydroisoquinoline** and its salts (DECKER and PSCHORR), 1904, A., i, 926.
- Benzylidenemethylenedioxy- α -hydrindone** (PERKIN and ROBINSON), 1906, P., 160.
- 4-Benzylidene-3-methyl-1-ethylhydantoin** (JOHNSON and NICOLET), 1912, A., i, 808.
- γ -Benzylidene- β -methylethylmalonic acid**, methyl ester (REIMER), 1907, A., i, 853.
- 3-Benzylidene-6-methylflavanone** (AUWERS and ARNDT), 1909, A., i, 669.
- α -Benzylidene- β -methylglutaconic acid** (FEIST and BEYER), 1906, A., i, 336.
- Benzylidenemethylglyoxime** peroxide nitrosate and **Benzylidenemethylglyoxalketoxime** and its semicarbazones (HARRIES and MILLS), 1904, A., i, 428.
- Benzylidene-3-methylcyclohexanone**, rotation of (HALLER), 1903, A., i, 563.
- 4-Benzylidene-1-methylhydantoin** (JOHNSON and NICOLET), 1912, A., i, 808.
- Benzylidenemethylhydrazine**, benzoyl derivative of (MICHAELIS and HADANCK), 1908, A., i, 1020.
- Benzylidenemethylhydrazine**, nitroso- (THIELE), 1910, A., i, 889.
- 3-Benzylidene-1-methylindene** (THIELE and BÜHNER), 1906, A., i, 570.
- 4-Benzylidenemethyl-6-methyl-2-pyrimidone**, *m-p*-*di*hydroxy-, and its salts (STARK and BÖGEMANN), 1910, A., i, 437.
- Benzylidene-2-methylnaphthathiazoles**. See 2-Styrylnaphthathiazoles.
- Benzylidene-3-methylphthalide** and its nitro-derivative (MÜLLER), 1909, A., i, 159.
- Benzylidene-*o*-methylquinaldine**. See 2-Styryl-8-methylquinoline.
- Benzylidene-2-methylquinoline**, synthesis of (V. ISMAILSKY), 1912, A., i, 128.

- Benzylidenemethylsemicarbazide** (MICHAELIS and HADANCK), 1908, A., i, 1020.
- 3-Benzylidene-6-methylthioflavanone** and its bromide and hydroxylamine additive product (AUWERS and ARENDT), 1909, A., i, 668.
- Benzylidenemethyl-**. See also Styryl-.
- Benzylidenemethysticol** and its phenylhydrazone (WINZHEIMER), 1908, A., i, 805.
- Benzylidene- α -naphthylamine**, chloro-nitro- (COHN and BLAU), 1904, A., i, 674.
- o-hydroxy-**, and its hydrochloride (POPE and FLEMING), 1908, T., 1916.
- Benzylidene- β -naphthylamine**, action of ethyl oxalacetate on (SIMON and MAUGUIN), 1908, A., i, 296.
- Benzylidene- β -naphthylamine**, *o*- and *m*-nitro- (HAASE), 1903, A., i, 367.
- Benzylidene- α - and - β -naphthylamines** and ω -cyano- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 438.
- 2:4-dinitro-** (SACHS and BRUNETTI), 1907, A., i, 756.
- 1-Benzylidenenaphthylhydrazone-4-sulphonic acid**, sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 522.
- 2-Benzylidenenaphthylhydrazone-6-sulphonic acid**, sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 522.
- Benzylidenenicotinic hydrazide**, *o*-chloro- (MEYER and MALLY), 1912, A., i, 515.
- Benzylideneisonicotinic hydrazide** and *o*-chloro- (MEYER and MALLY), 1912, A., i, 515.
- Benzylidenenitrosobenzhydrylhydrazine** and *o*-hydroxy- (DARAPSKY), 1903, A., i, 367.
- Benzylideneoxaldihydrazideoxime** (WIELAND), 1909, A., i, 885.
- 3-Benzylideneoxindole**, and *m*-nitro-, *o*-, *m*-, and *p*-hydroxy-, and 2:4- and 3:4-dihydroxy- (WAHL and BAGARD), 1909, A., i, 735.
- 3-Benzylideneoxindole**, *o*-amino-, (*o*-2-diamino- α -phenyleinnamic anhydride), (PSCHORR and POPOVICI), 1906, A., i, 851.
- Benzylidene-*p*-phenetidine** hydrochloride and its nitro-derivatives and their hydrochlorides (POPE and FLEMING), 1908, T., 1916.
- Benzylidenephenoxyacetone**. See α -Phenoxystyryl methyl ketone.
- Benzylidene-*p*-phenylenediamine**, acetyl derivative (BRAND and STORR), 1909, A., i, 564.
- 4-Benzylidene-1-phenyl-3-furyl-5-pyrazolone** (TORREY and ZANETTI), 1910, A., i, 893.
- Benzylidenephénylhexanone**. See α -Diphenyl- $\Delta\alpha$ -hepten- γ -one.
- Benzylidenephénylhydrazine**, *di*-nitro- and nitro- α -nitroso-derivatives (BAMBERGER and PEMSEL), 1903, A., i, 284.
- Benzylidenephényl-3-methyl-5-pyrazolone**, 2:5-dichloro-6-nitro- (MICHAELIS and ZILG), 1906, A., i, 217.
- 4-Benzylidene-1-phenyl-3-methyl-5-pyrazolone**, *o*-nitro- (HEIDUSCHKA and ROTHACKER), 1912, A., i, 52.
- Benzylidenephosphamic chloride**, α -chloro- (TITHERLEY and WORRALL), T., 1149; P, 150.
- 10-Benzylidenephthaloperine** (SACHS), 1909, A., i, 430.
- Benzylidenepicolide** and its hydrochloride (SCHOLTZ), 1912, A., i, 649.
- Benzylidenepicolinichydrazide** and *o*-chloro- (MEYER and MALLY), 1912, A., i, 515.
- Benzylidenepinacolin** and its hydrobromide (VORLÄNDER and HAYAKAWA), 1904, A., i, 65.
- Benzylidenepiperonylideneacetone**. See Styryl methylenedioxystyryl ketone.
- Benzylidenepiperonylidene-cyclopentanes** (STOBBE and HAERTEL), 1910, A., i, 44.
- Benzylidenepropiophenone**. See Phenyl α -methylstyryl ketone.
- Benzylidene- α -isopropylanhydroacetonebenzil** (JAPP and KNOX), 1905, T., 677.
- Benzylidenepyruvic acid**, oxime of (CIUSA and BERNARDI), 1910, A., i, 684.
- Benzylidenequinaldine**. See 2-Styrylquinoline.
- Benzylidenequinone**. See Benzylidenebenzoquinone.
- Benzylidenerhodanic acid**, *o*-amino- and *m*-nitro- (BARGELLINI), 1906, A., i, 536.
- m*- and *p*-hydroxy- (BARGELLINI), 1906, A., i, 384.
- Benzylidenerhodanineglycylglycine** (ANDREASCH), 1910, A., i, 695.
- β -Benzylidene- α -rhodaninepropionic acid**, and *p*-hydroxy- (ANDREASCH), 1910, A., i, 695.
- Benzylidenesalicylamides**, *anti*- and *syn*-, preparation and benzylation of (TITHERLEY), 1907, T., 1426; P., 204.
- Benzylidenesorbitol**, nitro-derivatives of (SIMONET), 1903, A., i, 633.

- Benzylidenesulphobutyric acid** and its salts (KÖHLER), 1904, A., i, 321.
- Benzylidenesulphothylmalonic acid**, potassium salt (KÖHLER), 1904, A., i, 320.
- Benzylidenetetracetone** (HALLER), 1905, A., i, 602.
and its hydroxylamine compound (SEMMLER), 1904, A., i, 176.
- 1-Benzylidene-1:2:3:4-tetrahydroacridine**, and its picrate (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 883.
- Benzylidenetetrazoline**, formula of (RUHEMANN), 1906, A., i, 465.
and its *o*- and *p*-mono- and 3:4-dihydroxy- and *o*-, *m*-, and *p*-nitro-derivatives (RUHEMANN and MERRIMAN), 1905, T., 1774.
- Benzylidenethienylideneacetone** and its tetrabromide (GRISHKEWITSCH-TROCHIMOWSKY and MATSCHUREVITSCH), 1912, A., i, 642.
- Benzylidenedi- and tri-thio-*o*-toluidines**, *m*-nitro- (HODGSON), 1912, T., 1698; P., 222.
- Benzylidenethioxanthene** and its additive salts (DECKER and v. FELLEBERG), 1905, A., i, 668.
- Benzylidene-*o*-toluidine**, *p*-hydroxy-MANCHOT and FURLONG), 1910, A., i, 34.
- Benzylidene-*m*-toluidine** (LAW), 1912, T., 158.
- Benzylidene-*m*-toluidine**, *m*- and *p*-hydroxy- (SENIER and SHEPHEARD), 1909, T., 1951.
- Benzylidene-*p*-toluidine**, 3:4:5-tribromo- (BLANKSMA), 1912, A., i, 982.
m- and *p*-nitro- (ULLMANN and WEINTRAUB), 1903, A., i, 520.
- Benzylidene-*o*- and -*p*-toluidines**, 2-chloro-5-nitro- (COHN and BLAU), 1904, A., i, 674.
- Benzylidene-di-*o*-tolyl-*o*-xylylenediamine** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- Benzylidene- γ -triazobutylhydrazide**, and *o*-hydroxy- (CURTIUS and GIULINI), 1912, A., i, 427.
- Benzylidene- β -triazooethylamine**, *p*-nitro- (FORSTER and NEWMAN), 1911, T., 1280; P., 154.
- Benzylidene- α -triazopropionhydrazide** (CURTIUS and FRANZEN), 1912, A., i, 426.
- 2-Benzylidene-1:3:3-trimethylindoline** and its additive salts (BRUNNER), 1905, A., i, 468.
- Benzylidenevinylidiacetoneamine** and its hydrochloride (PAULY and RICHTER), 1908, A., i, 286.
- 9-Benzylidenexanthene** (DECKER, BÜNZLY, and v. FELLEBERG), 1905, A., i, 668.
- 2:5-Benzylimino-1-phenyl-2:3-dimethylpyrazole** (2:5-benzyliminopyrine), and its additive salts (MICHAELIS and BLUME), 1905, A., i, 480.
- Benzyliminophthalanil** (REISSERT and HOLLE), 1911, A., i, 982.
- β -Benzyliminopropyl methyl ketone** and α -oximino- (RÜGHEIMER and RITTER), 1912, A., i, 474.
- 2:5-Benzyliminopyrine**. See 2:5-Benzylimino-1-phenyl-2:3-dimethylpyrazole.
- 4-Benzyliminopyrine**. See 2:5-Imino-1-phenyl-4-benzyl-3-methylpyrazole.
- Benzylidene** (WEISSGERBER), 1911, A., i, 713.
- 1-Benzylidene** and its dibromide and nitrosochloride (THIELE and BÜHNER), 1906, A., i, 569.
- β -Benzylmalic acid** and its salts (DOEBNER and KERSTEN), 1905, A., i, 786.
- Benzylmalimides** and their benzoyl derivatives (LUTZ), 1904, A., i, 831; 1905, A., i, 191; (LADENBURG and HERZ), 1904, A., i, 992; 1905, A., i, 272.
- Benzylmalonamide**, *o*-nitro- (CONRAD and SCHULZE), 1909, A., i, 213.
- Benzylmalonic acid**, anilide of (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 136.
ethyl hydrogen ester, and its potassium salt, amide, and chloride (MARGUERY), 1905, A., i, 507.
- Benzylmalonic acid**, amino-, phthalyl derivative (SØRENSEN), 1903, A., i, 834.
p-amino-, and its hydrochloride (ABDERHALDEN and BROSSA), 1909, A., i, 800.
 α -bromo- (FISCHER), 1904, A., i, 890.
3:5-di-bromoamino-, *N*-phthalyl derivative (WHEELER and CLAPP), 1908, A., i, 398.
o-cyano-, ethyl ester (MITCHELL and THORPE), 1910, T., 2270; P., 249.
p-iodo- (ABDERHALDEN and BROSSA), 1909, A., i, 800.
- Benzylmalonyl chloride** (FARBENFABRIKEN VORM. F. BAYER & CO.), 1912, A., i, 1025.
- Benzylmalonylguanidine** (KAST), 1912, A., i, 1024.
- Benzylmenthone**, and α -hydroxylamino-, and **Benzylmenthol**, and α -amino- (SEMMLER), 1904, A., i, 260.
- Benzylmethylacetic acid**. See β -Phenylisobutyric acid.

- Benzylmethylacetyl chloride.** See *β -Phenylisobutyryl chloride.*
- Benzylmethylallylamine** and its platinichloride (EMDE and SCHELLBACH), 1911, A., i, 282.
- Benzylmethylallylpropylammonium chloride** (FISCHER and SCHELLBACH), 1911, A., i, 282.
- Benzylmethylamine**, *o*-cyano-, and its hydrochloride and aurichloride (FISCHER and WOLTER), 1909, A., i, 639.
- p*-hydroxy-, and its salts (TIFFENEAU), 1911, A., i, 778.
- 3:4-dihydroxy-, and its hydrochloride (TIFFENEAU), 1911, A., i, 973.
- Benzylmethylaminoacetic acid** and its ethyl ester and their salts (MANNICH and KUPHAL), 1912, A., i, 218.
- Benzylmethylaminomethylcarbinol** and its methiodide and dibenzoyl derivative (FOURNEAU), 1905, A., i, 57.
- Benzylmethylaniline**, *m*-amino- and its acetyl derivative, *p*-hydroxy-, and *m*-nitro- (GNEHM and SCHÖNHOLZER), 1908, A., i, 113.
- Benzylmethylanilinesulphonic acid** and its salts and nitroso-derivative (GNEHM and SCHÖNHOLZER), 1908, A., i, 113.
- Benzylmethyl-*p*-anisidine** (FRÖHLICH and WEDEKIND), 1907, A., i, 411.
- 1-Benzyl-2-methylbenzimidazole**, 4:7-dinitro-6-hydroxy-, synthesis of (MELDOLA), 1906, T., 1940.
- 1-Benzyl-2-methylbenzopyrazolone** (MILRATH), 1908, A., i, 1014.
- β -Benzyl- β -methylbutane** (TAFEL and JURGENS), 1909, A., i, 545.
- α -Benzyl- β -methyl- $\Delta\beta$ -butenoic acid**, γ -cyano- (GUARESCHI), 1907, A., i, 1004.
- α -Benzyl- α -methylbutyric acid** (DUMESNIL), 1911, A., i, 719.
- Benzylmethylcarbinol**, ω -amino-, and its hydrochloride (SCHMIDT and CALLIESS), 1911, A., i, 742.
- Benzylmethyldichloroacetamide** (MANNICH and KUPHAL), 1912, A., i, 851.
- Benzylmethylchloromethylcarbinol** (RIEDEL), 1906, A., i, 632.
- α -Benzyl- β -methylcrotonic acid**, γ -cyano-, ethyl ester (BLAND and THORPE), 1912, T., 891.
- Benzylmethyldiacetonalkamine.** See *Methyl- β -benzylmethylaminoisobutylcarbinol.*
- 5-Benzyl-10-methyldihydroacridine**, 5-cyano- (KAUFMANN, ALBERTINI, and WIDMER), 1911, A., i, 751.
- 9-Benzyl-10-methyldihydroacridine** (FREUND and BODE), 1909, A., i, 515.
- 3-Benzyl-2-methyl-4-dihydroquinazolinone** (BOGERT and BEAL), 1912, A., i, 394.
- 1-Benzyl-2-methyl-1:2-dihydroisoquinoline** and its platinichloride and tetrahydro-derivative and its salts and methiodide (FREUND and BODE), 1909, A., i, 516.
- Benzylmethyldimethylaminomethylcarbinol** and its benzoate (FOURNEAU), 1904, A., i, 378.
- 3-Benzyl-1-methyldioxindole** methyl ether (KOHN and OSTERSETZER), 1912, A., i, 51.
- Benzylmethylethanolamine** and its salts (MANNICH and KUPHAL), 1912, A., i, 850.
- Benzylmethylethylacetamide** (DUMESNIL), 1911, A., i, 719.
- Benzylmethylethylacetophenone** (DUMESNIL), 1911, A., i, 719.
- Benzylmethylethylcarbinol** (KONOWALOFF), 1904, A., i, 496.
- preparation of (DAVIES and KIPPING), 1911, T., 298.
- dl*-**Benzylmethylethylpropylsilicane** and experiments on the resolution of its sulphonic derivative (KIPPING), 1907, T., 717 ; P., 83.
- Benzylmethylethylpropylsilicanesulphonic acid**, metallic, alkaloidal, and methylamine salts (KIPPING), 1907, T., 735 ; P., 83.
- 1-Benzyl-2-methyl-1-ethyltetrahydroquinolinium iodide** (SCHOLTZ and PAWLICKI), 1905, A., i, 474.
- α -Benzyl- β -methylglutaconic acid** and its salts and derivatives (BLAND and THORPE), 1912, T., 1744.
- γ -Benzyl- β -methylglutaconic acid**, α -cyano-, ethyl esters (BLAND and THORPE), 1912, T., 889.
- Benzylmethylglutaconimide**, cyano-, and its metallic and alkaloidal derivatives (GUARESCHI), 1905, A., i, 823.
- Benzylmethylglycidic acid**, ethyl ester (DARZENS), 1907, A., i, 179.
- Benzylmethylglyoxaline**, 4:5- or 5:4-, and its additive salts and mercaptan (SONN), 1908, A., i, 56.
- 3-Benzyl-1-methylcyclohexan-3-ol** (MAILHE and MURAT), 1911, A., i, 127.
- 4-Benzyl-1-methylcyclohexan-3-ol** and hydroxy- (HALLER and MARCH), 1905, A., i, 276, 771.
- 4-Benzyl-1-methylcyclohexan-4-ol** and its phenylcarbamate and -cyclohexene (SABATIER and MAILHE), 1906, A., i, 255.

- 1-Benzyl-4-methylcyclohexan-2-one and its oxime and semicarbazone, and 1-carboxylic acid, ethyl ester, and its *p*-nitro-derivative (KÖTZ and KAYSER), 1906, A., i, 667.
- 2-Benzyl-1-methyl- Δ^2 -cyclohexene (MURAT), 1909, A., i, 147.
- 3-Benzyl-1-methylcyclohexene (MAILHE and MURAT), 1911, A., i, 127.
- Benzyl-1-methylcyclohexyl-3-amine (WALLACH), 1906, A., i, 161.
- 4-Benzyl-1-methylhydantoin, *p*-hydroxy- (JOHNSON and NICOLET), 1912, A., i, 585.
- α -Benzyl- β -methylhydrazine dihydrochloride and α -nitroso- (THIELE), 1910, A., i, 889, 890.
- β -Benzyl- α -methylhydrazine, α -nitroso- (THIELE), 1910, A., i, 889.
- 3-Benzyl-1-methylindene (THIELE and BÜHNER), 1906, A., i, 570.
- Benzyl methyl ketone, formation of (TIEFFENEAU), 1904, A., i, 63.
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- Benzyl methyl ketone, α -amino-, and its salts (GABRIEL and LIECK), 1908, A., i, 466.
aurichloride (EMDE and RUNNE), 1909, A., i, 300.
 α -cyano- (BODROUX), 1910, A., i, 623.
2:4-dinitro-, and its phenylhydrazone (BORSCHÉ), 1909, A., i, 232.
 α -oximino-, and its derivatives (BORSCHÉ and OPPENHEIMER), 1912, A., i, 652.
2:6-dinitro-, and its phenylhydrazone (BORSCHÉ and RANTSCHÉFF), 1911, A., i, 332.
- Benzylmethylmalonic acid, esters and amide of (MEYER), 1907, A., i, 180.
- Benzylmethylmalonic acid, *p*-nitro-, and its salts and ethyl ester (ROMEO), 1905, A., i, 435.
- Benzylmethylnitrosoamine (RÂV and DATTA), 1912, P., 258.
- Benzylmethyl-*p*-nitrosoaniline and its hydrochloride (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- Benzylmethylisoolivil (KÖRNER and VANZETTI), 1912, A., i, 353.
- β -Benzyl- δ -methyl- $\Delta\gamma$ -pentene, β -hydroxy-, and β -Benzyl- δ -methyl- $\Delta\gamma$ -pentadiene (V. FELLEBERG), 1906, A., i, 567.
- Benzylmethyl-*p*-phenetidine (WEDEKIND and FRÖHLICH), 1907, A., i, 410.
- as*-Benzylmethyl-*p*-phenylenediamine and its sulphate (GNEHM and SCHÖNHOLZER), 1908, A., i, 112.
- Benzyl-3-methylphthalide (MÜLLER), 1909, A., i, 159.
- 1-Benzyl-3-methylpyrazole-blue (CURTIUS and SCHNEIDERS), 1912, A., i, 138.
- 1-Benzyl-3-methyl-5-pyrazolone, and 4-amino-, 4-dibromo-, 4-dichloro-, 4-nitro-, and 4-oximino-, and their derivatives (CURTIUS and SCHNEIDERS), 1912, A., i, 137.
- 1-Benzyl-3-methyl-6-pyridazinone (CURTIUS and SCHNEIDERS), 1912, A., i, 137.
- 3-Benzyl-4-methylpyridine, 2:6-dihydroxy- and its dibenzoyl derivative (BLAND and THORPE), 1912, T., 1743.
- 3-Benzyl-4-methyl- α -pyrone, 6-chloro-, and its dianilide and 6-hydroxy-, and its potassium salt (BLAND and THORPE), 1912, T., 1745.
- 1-Benzyl-2-methylpyrrolidone, 2-cyano- (KÜHLING and FRANK), 1909, A., i, 955.
- Benzylmethylsulphone (FROMM and DE SEIXAS PALMA), 1906, A., i, 819.
- 5-Benzyl-7-methyltetrahydrohexathiazole-4-one-5-carboxylic acid, 2-amino-, ethyl ester (JOHNSON and HILL), 1911, A., i, 503.
- Benzylmethyltetrahydroquinolium salts (E. and O. WEDEKIND), 1907, A., i, 1074.
- 3-Benzyl-1-methylthymine (JOHNSON and DERBY), 1908, A., i, 1019.
- Benzylmethyltriazene and its metallic derivatives (DIMROTH), 1905, A., i, 312.
- 5-Benzyl-1-methyltriazole, 3-hydroxy- (RUPE and OESTREICHER), 1912, A., i, 221.
- 1-Benzyl-5-methyltriazole (WOLFF and KRÜCHE), 1912, A., i, 1030.
- 1-Benzyl-5-methyltriazole, 3-hydroxy-1-*o*-hydroxy- (RUPE and OESTREICHER), 1912, A., i, 221.
- 1-Benzyl-5-methyl-1:2:3-triazole-4-carboxylic acid and its ethyl ester (WOLFF and KRÜCHE), 1912, A., i, 1030.
- 3-Benzyl-1-methyluracil and 5-bromo- (JOHNSON and DERBY), 1908, A., i, 1018.

- 1-Benzyl-4-methyluracil (WHEELER and MCFARLAND), 1909, A., i, 678.
and 5-bromo-, 5:5-dibromohydroxy-, and hydroxy- (HOEBEL), 1907, A., i, 558.
- 3-Benzyl-4-methyluracil (HOEBEL), 1907, A., i, 558.
- 5-Benzyl-4-methyluracil, and 2-thio- (WHEELER and MCFARLAND), 1909, A., i, 678.
- β -Benzyl-naphthalic acid (DZIEWOŃSKI and WECHSLER), 1904, A., i, 803.
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- 4-Benzyl-1:2-naphthaquinol, cyano-, and 1:2-dihydroxycyano-, and its diacetyl derivative (SACHS and CRAVERI), 1905, A., i, 910.
- Benzyl- α -naphthol and its acyl and nitro-derivatives (BAKUNIN and BARBERIO), 1904, A., i, 321.
- Benzyl- β -naphthol and its acyl derivatives (BAKUNIN and ALTIERI), 1904, A., i, 313.
- Benzyl- β -naphthol, amino-, resolution of (BETTI), 1906, A., i, 950.
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- α -amino-, aromatic aldehydic derivatives of, relation between the chemical constitution and rotatory power of (BETTI), 1907, A., ii, 661.
- τ - α -amino-, resolution of, by means of dextrose (BETTI), 1907, A., i, 314.
- 3:5-dibromo-4-hydroxy- (AUWERS and RIETZ), 1905, A., i, 888.
- 1-Benzyl-2-naphthol-3-carboxylic acid and its methyl ester and acetyl derivative, and α -amino-, α -bromo-, α -chloro-, and α -hydroxy-, methyl esters of (FRIEDL), 1910, A., i, 742.
- Benzyl-naphthyl-. See Naphthylbenzyl-.
- Benzyl- α -naphthylamine, 4-bromo-2-nitro-, and its acetyl derivative and nitrosoamine (MELDOLA), 1906, T., 1436; P., 245.
- 2:4-dinitro- (ULLMANN and BRUCK), 1909, A., i, 22.
- Benzyl- β -naphthylamine, 2:4:6-trinitro- (REICH, WETTER, and WIDMER), 1912, A., i, 959.
- Benzyl- α - and - β -naphthylamines, p -amino-, and their triacetyl derivatives (DARIER and MANNASSEWITCH), 1903, A., i, 83.
- o -, m -, and p -nitro- and their acetyl derivatives (DARIER and MANNASSEWITCH), 1903, A., i, 82.
- Benzyl-nitroamine, and its mercury derivative (THIELE), 1910, A., i, 890.
- Benzyl- m -nitroaniline, 2:4:6-trinitro- (REICH, WETTER, and WIDMER), 1912, A., i, 959.
- Benzyl- p -nitroaniline, nitroamino-, action of acetic anhydride and sulphuric acid on (STILLICH), 1903, A., i, 864.
- N -Benzyl- o -nitrobenzaldoxime hydrogen periodides (BECKMANN, EBERT, NETSCHER, and SCHULZ), 1909, A., i, 654.
- 2-Benzyl-6-nitroindazole (NOELTING), 1904, A., i, 691.
- Benzyl- p -nitrophenylhydrazine, α -di-bromo- p -hydroxy-, α - N -acetate of (AUWERS and DANNEHL), 1909, A., i, 223.
- 9-Benzyl-octahydroanthranol (GODCHOT), 1907, A., i, 309.
- Benzylaloxaluric acid (HOEBEL), 1907, A., i, 559.
- Benzylloxamic acid, ethyl ester (THIELE), 1910, A., i, 889.
- Benzylloxamide (THIELE), 1910, A., i, 889.
- Benzylloxanilic acid, phenyl ester (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- Benzylloxide, sodium, action of alcohols on (GUERBET), 1908, A., i, 162, 635.
- Benzylloxylaminotribromo- o -benzoquinone (HANTZSCH and GLOVER), 1907, A., i, 101.
- Benzylloxylbenzene- p -sulphonic acid, sodium salt (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- o - and p -Benzylloxylbenzoic acid, menthyl esters of (COHEN and DUDLEY), 1910, T., 1745.
- o -Benzylloxylbenzoyl chloride (BOEHRINGER & SÖHNE), 1910, A., i, 386.
- 2- o -Benzylloxylbenzoyloxylbenzoic acid (benzylsalicylosalicylic acid) (BOEHRINGER & SÖHNE), 1910, A., i, 386.
- 1-Benzylloxyl-2:6-dimethyl-4-pyridone-3:5-dicarboxylic acid, ethyl ester (PALAZZO), 1906, A., i, 701.
- β -Benzylloxyl-naphthoic acid, menthyl ester of (COHEN and DUDLEY), 1910, T., 1748.
- 1-Benzylendoxytriazole, 5-thiol-, and its 4-methyl and 4-allyl derivatives (BUSCH and OPFERMANN), 1904, A., i, 630.
- N -Benzylisopapaverine and its picrate (DECKER and KLAUSER), 1904, A., i, 338; (DECKER and HOCK), 1904, A., i, 620.
- 2-Benzylperimidine and its salts (SACHS), 1909, A., i, 423.
- Benzylphenaceturic acid, derivatives of (KROPP, DECKER, and ZOELLNER), 1909, A., i, 388.

- 9-Benzylphenanthrene** (WILLGERODT and ALBERT), 1911, A., i, 883.
- Benzyl-*p*-phenetidine**, *o*-hydroxy-, and its acetyl derivative (PAAL), 1903, A., i, 340.
- p*-mono- and 1:3-*di*-hydroxy- (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- Benzylphenol**. See Diphenylmethane, hydroxy-.
- Benzylphenoxyacetone** (STOERMER and WEHLN), 1903, A., i, 41.
- Benzyl α -phenyl- β -benzyl- γ -benzylidenepropyl ketone** (REIMER and REYNOLDS), 1908, A., i, 989.
- Benzyl-*o*-phenylenediamine**, tetrachloro-, acetyl derivative (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 444.
- Benzyl- β -phenylethylmethylcarbinol** and its chloride (ORECHOFF and MEERSON), 1912, A., i, 621.
- Benzyl β -phenylpropylsulphone** (POSNER and TSCHARNO), 1905, A., i, 279.
- Benzylphosphinic acid**, hydroxy-, and its dimethyl ester, benzoate and silver salt (MARIE), 1903, A., i, 220.
- and its calcium salt (PAGE), 1912, T., 425.
- aniline salt (VALLÉE), 1908, A., i, 976.
- Benzylphthalamic acid**, intramolecular condensation of (TINGLE and LOVE-LACE), 1907, A., i, 1045.
- 1-Benzylphthalazine** and its additive salts and 4-iodo- (LIECK), 1906, A., i, 50.
- Benzylphthalimide** (TINGLE and BRENTON), 1909, A., i, 799.
- crystallography of (JAEGER), 1904, A., i, 895.
- Benzylphthalimide**, 3:5-*di*bromo- (WHEELER and CLAPP), 1908, A., i, 898.
- Benzylisophthalimide**, crystallography of (JAEGER), 1904, A., i, 895.
- Benzylphthalimides** and hydroxy-, preparation of (TSCHERNIAC), 1903, A., i, 490.
- Benzylphthalimidine**, *o*-amino-, and its salts, and *o*-hydroxy- (GABRIEL), 1912, A., i, 393.
- Benzylphthaliminomalonic acid**, ethyl ester (SØRENSEN), 1903, A., i, 834.
- 10-Benzylphthaloperine**, 10-hydroxy- (SACHS), 1909, A., i, 430.
- Benzylpiperidine**, *d*-, and its hydrogen tartrate, and aurichloride, and *r*- (LADENBURG and SOBECKI), 1909, A., i, 832.
- Benzylpiperidine** and its salts (HAASE and WOLFFENSTEIN), 1904, A., i, 856.
- 1-Benzylpiperidine**, *p*-hydroxy-, and its dibromo-derivatives and their hydrobromides (KOENIGS and BERNHART), 1908, A., i, 285.
- 3-Benzylpiperidine** and its platinum-chloride (TSCHITSCHIBABIN), 1903, A., i, 853.
- Benzylpiperidines**, hydroxy- (AUWERS and DOMBROWSKI), 1906, A., i, 380.
- Benzylcyclopropanecarboxylic acid**, and its amide (HALLER and BENOIST), 1912, A., i, 570.
- α -Benzylpropionic acid**, ethyl ester (DIECKMANN and KRON), 1908, A., i, 389.
- β -Benzylpropyl alcohol**, γ -chloro- (RIEDEL), 1907, A., i, 920.
- Benzylpropylconinium iodides**, isomeric (SCHOLTZ), 1905, A., i, 297.
- N*-Benzyl-*S*-propyldithiourethane** (v. BRAUN), 1903, A., i, 15.
- 3-Benzylpyridine**, formation of, by Ladenburg's reaction (TSCHITSCHIBABIN), 1903, A., i, 853.
- Benzylpyridines**, 2- and 4-, condensation of, with formaldehyde (TSCHITSCHIBABIN), 1904, A., i, 524.
- oxidation of (TSCHITSCHIBABIN), 1904, A., i, 524.
- 4-Benzylpyridinium salts**, 2:3:5:6-*tetra*-chlorohydroxy- (ZINCKE and HUNKE), 1906, A., i, 738.
- 5-Benzylpyrimidine**, amino-, halogen- and hydroxy-derivatives of (KAST), 1912, A., i, 1023.
- 3-Benzyl- α -pyrone**, 6-chloro-, and 6-hydroxy-, and salts of the latter (THOLE and THORPE), 1911, T., 2229.
- Benzyl pyrrol ketone**, phenylhydrazene (ODDO), 1910, A., i, 426.
- Benzylpyruvic acid** (γ -phenyl- α -keto-butyric acid), preparation and condensation products of (BOUGAULT), 1912, A., i, 771.
- brucine salt (HILDITCH), 1911, T., 235.
- 2-Benzylquinol** (STOLLÉ and MÖRING), 1904, A., i, 875.
- Benzylquinoline chloride** and *d*-camphorsulphonate (REYCHLER), 1903, A., i, 366.
- 2-Benzylquinoline** and **1-Benzylisoquinoline**, methiodides of (DECKER and PSCHORR), 1904, A., i, 926.
- 2-Benzyl-1-isoquinolone**, 6:7-*di*hydroxy- (DECKER and KLAUSER), 1904, A., i, 339.
- 3-Benzylisoquinoline** and its salts (RÜGHEIMER), 1903, A., i, 775.

- 4-Benzylisoquinoline derivatives** (RÜGHEIMER and ALBRECHT; RÜGHEIMER and SCHAUMANN), 1903, A., i, 439.
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- 4-Benzylisoquinoline and its salts**, *p*-amino-, and *m*-nitro-*p*-amino- and their acetyl derivatives, and *p*-nitro- (RÜGHEIMER and FRILING), 1903, A., i, 438.
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- 3-Benzylrhodanic acid and its condensation with aldehydes** (ANDREASCH), 1908, A., i, 683.
- Benzylsalicylosalicic acid.** See 2-*o*-Benzylloxybenzoyloxybenzoic acid.
- 5-Benzylselenolacridol and *op*-dinitro- and their salts** (EDINGER and RITSEMA), 1903, A., i, 720.
- Benzylsemicarbazide and its derivatives and nitroso-** (RESSLER and RUPE), 1912, A., i, 219.
o-hydroxy-, and its derivatives (RUPE and OESTREICHER), 1912, A., i, 221.
- 3-Benzyl-2-styryl-4-dihydroquinazalone** (BOGERT and BEAT), 1912, A., i, 394.
- β -Benzyl- β -styrylpropiphenone and its dibromide and oxime** (KOHLE), 1905, A., i, 359.
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- Benzylsulphinic acid.** See Toluene-sulphinic acid.
- Benzylsulphonic acid.** See Toluene-sulphonic acid.
- Benzyltannins**, hydroxy-, pharmacological behaviour of (HILDEBRANDT), 1907, A., i, 715.
- α -Benzyltetrahydroberberine and its stannichloride** (FREUND), 1912, A., i, 383.
- N*-Benzylisotetrahydroberberine and its derivatives** (McDAVID, PERKIN, and ROBINSON), 1912, T., 1224.
- 1-Benzyltetrahydrophthalazine and its additive salts and dibenzoyl derivative** (LIECK), 1906, A., i, 50.
- 2-Benzyltetrahydroisoquinoline and its oxalate and 2-acetic acid, ethyl ester, iodide of** (WEDEKIND and OECHSLEN), 1903, A., i, 517.
- 3-Benzyl-2:2:5:5-tetramethyltetrahydrofuran, 3-hydroxy-** (DUPONT), 1912, A., i, 291.
- Benzyltheophylline and its additive salts** (SCHMIDT and SCHWABE), 1906, A., i, 450; (SCHWABE), 1908, A., i, 46.
- 4-Benzyl-1:4-thiazan and its salts** (CLARKE), 1912, T., 1589; P., 218.
- Benzylisothioanilincyanomalononic acid, ethyl ester** (RUHEMANN), 1908, T., 627.
- Benzylisothioanilinomethanetricarboxylic acid, diethyl ester** (RUHEMANN), 1908, T., 625; P., 53.
- ψ -Benzylthiocarbamide cyanide, amino-** (FROMM and v. GÖNCZ), 1907, A., i, 873.
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- 5-Benzylthiolacridol, nitro-derivatives, and their salts** (EDINGER and RITSEMA), 1903, A., i, 720.
- α -Benzylthiolacrylic acid, β -hydroxy-, ethyl ester** (JOHNSON and GUEST), 1909, A., i, 745.
- 1-Benzylthiolanthraquinone** (GATTERMANN), 1912, A., i, 999.
- Benzylthiolbenzylacetylacetone** (RUHEMANN), 1905, T., 21.
- 2-Benzylthiol-5-benzyl-4-methyl-4-hydro-6-pyrimidone** (WHEELER and McFARLAND), 1909, A., i, 678.
- 5-Benzylthiolecytosine** (JOHNSON and GUEST), 1909, A., i, 744.
- 2-Benzylthiol-4-hydro-6-pyrimidone and its sodium salt** (WHEELER and LIDDLE), 1909, A., i, 61.
- 3-Benzylthiol-1:4-diphenylurazole** (WHEELER and STATIROPOULOS), 1905, A., i, 721.
- 5-Benzylthiol-2-ethylthiolpyrimidine, 6-chloro-, and 6-amino-** (JOHNSON and GUEST), 1909, A., i, 745.
- 5-Benzylthiol-2-ethylthiol-6-pyrimidone** (JOHNSON and GUEST), 1909, A., i, 745.
- α -Benzylthiolhydroxypropionic acid** (POSNER and HAZARD), 1903, A., i, 243.
- 6-Benzylthiol-4-methyl-2-pyrimidone, *o*-nitro-** (WHEELER and McFARLAND), 1909, A., i, 970.
- 2-Benzylthiol-5-methyl-6-pyrimidone** (WHEELER, McFARLAND, and STOREY), 1910, A., i, 139.
- 2-Benzylthiol-1-phenyl-4-benzylidenehydantoin** (WHEELER and BRAUTLECHT), 1911, A., i, 500.
- 5-Benzylthiol-1-phenyl-3-methylthiazole (*benzyl- ψ -thiopyrine*), and its sulphone** (MICHAELIS, BESSON, MOELLER, and KOBER), 1904, A., i, 783.
- 5-Benzyl-5-thiolpropylbarbituric acid** (JOHNSON and HILL), 1911, A., i, 503.

- Benzyl- β -thiolpropylmalonic acid**, potassium hydrogen salt of (JOHNSON and HILL), 1911, A., i, 503.
- 2-Benzylthiol-6-pyrimidone** and its sodium salts (WHEELER and LIDDLE), 1909, A., i, 61.
- 5-Benzylthiol-6-pyrimidone**, 2-thio- (JOHNSON and GUEST), 1909, A., i, 745.
- α -Benzylthiolstyrylacrylic acid** (ZIPSER), 1903, A., i, 274.
- Benzylthiol-toluquinol** and its diacetate and -toluquinone (POSNER and LIPSKI), 1904, A., i, 1031.
- 5-Benzylthioluracil** (JOHNSON and GUEST), 1909, A., i, 744.
- Benzyl- ψ -thiopyrine**. See 5-Benzylthiol-1-phenyl-3-methylthiazole.
- 1-Benzylthiourazole**, and its 4-allyl, 4-methyl and 4-phenyl derivatives (BUSCH and OPFERMANN), 1904, A., i, 631.
- S-Benzyl-dithiourethane** (V. BRAUN), 1903, A., i, 14.
- Benzylthioxanthen** (DECKER and V. FELLEBERG), 1905, A., i, 668.
- Benzylthymines**, 1- and 3- (JOHNSON and DERBY), 1908, A., i, 1019.
- Benzyl-o-toluidine**, *o*-nitro-, crystallography of (JAEGER), 1906, A., i, 642.
- Benzyl-p-toluidine**, *o*-mono- and 1:3-dihydroxy- (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
- Benzyl-o- and -p-toluidines**, *o*-nitro- (JAEGER), 1905, A., i, 585.
2:4:6-trinitro- (REICH, WELTER, and WIDMER), 1912, A., i, 959.
- Benzyl-m- and -p-toluidines** and their hydrochlorides (LAW), 1912, T., 158.
- Benzyl-o-, -m-, and -p-toluidines**, *p*-chloro-, and their hydrochlorides (LAW), 1912, T., 165.
- 2-Benzyl-m-tolylenediamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 584.
- 1-Benzyl-1:2:4-triazole**, 3-hydroxy-, and 3-hydroxy-1-*o*-hydroxy- (RUPE and OESTREICHER), 1912, A., i, 221.
- 1-Benzyl-1:2:3-triazole-4-carboxylic acid**, 5-hydroxy-, methyl ester, and its diazo-derivative (DIMROTH, ATCKELIN, BRAHN, FESTER, and MERCKLE), 1910, A., i, 520.
- 1-Benzyl-1:2:3-triazole-5-carboxylic acid** (WOLFF and KRÜCHE), 1912, A., i, 1030.
- Benzyltrimethylammonium** bromide, biological behaviour of (HILDEBRANDT), 1907, A., ii, 497.
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- Benzyltrimethylammonium** hydroxide, 2:3:5:6-tetrachloro-4-hydroxy-, betaine derivative of (ZINCKE and HUNKE), 1906, A., i, 738.
- Benzyltrimethylsilicane** (BYGDÉN), 1912, A., i, 342.
- 1-Benzyl-2:6:8-trimethyltetrahydroquinoline** hydriodide (JONES and EVANS), 1911, T., 338.
- 1-Benzyluracil** (JOHNSON and DERBY), 1908, A., i, 1018.
- 3-Benzyluracil**, preparation of (WHEELER and JOHNSON), 1909, A., i, 677.
and 3-bromo- and *p*-5-dinitro- (JOHNSON and DERBY), 1908, A., i, 1018.
- Benzyluracils**, 1- and 3-, 5-hydroxy- (JOHNSON and JONES), 1909, A., i, 60.
- Benzyluramil** (MÖHLAU and LITTER), 1906, A., i, 612.
- Benzylvaleric acid**, and its salts, ethyl ester, chloride, and amide (GUERBET), 1908, A., i, 636.
- α -Benzyl- γ -valerolactone- α -carbonylthiocarbamide** (JOHNSON and HILL), 1911, A., i, 503.
- α -Benzyl- γ -valerolactone- α -carboxylic acid**, and its silver salt (JOHNSON and HILL), 1911, A., i, 503.
- 2-Benzyl-5-veratryloxazole** (ROBINSON), 1909, T., 2173; P., 295.
- Benzylvinylmethylamine** and its salts (MANNICH and KUPHAL), 1912, A., i, 850.
- 2-Benzylxanthen** (HELLER and V. KOSTANECKI), 1908, A., i, 445.
- 9-Benzyl-xanthen** and -xanthenol (DECKER, BÜNZLY, and V. FELLEBERG), 1905, A., i, 668.
- Benzylxanthylum salts** (DECKER, BÜNZLY, and V. FELLEBERG), 1905, A., i, 668.
- Benzyl-p-xyleneol**, 3:5-dibromo-4-hydroxy- (AUWERS and RIETZ), 1905, A., i, 888.
- Benzyl-as-xylylidene**, *o*-hydroxy-, and its acetate (PAAL), 1903, A., i, 340.
- Berberilene**. See 3:4-Dimethoxy-3':4'-methylenedioxy-2-hydroxymethyl-6'-vinylstilbene.
- Berberine** from *Chelidonium majus* and from *Stylophorum diphyllum* (SCHLOTTERBECK), 1903, A., i, 193.
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- Berberine** and allied alkaloids (PERKIN and ROBINSON), 1910, T., 305; P., 24.
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- Berberrubine**, and its hydrochloride and sulphate (FRERICHS), 1910, A., i, 500.
- Bergamot oil** (SCHIMMEL & Co.), 1903, A., i, 186; 1910, A., i, 757.
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- Berthierite** from Bräunsdorf, Saxony (LOCZKA), 1903, A., ii, 434.
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- Bertrandite** from Altai (PILIPENKO), 1910, A., ii, 48.
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- Beryls**, chemical structure of (VERNADSKY), 1908, A., ii, 955.
- Beryl crystals**, some interesting, and their associations (FORD), 1906, A., ii, 684.
- Beryllium**. See Glucinum.
- Berzelium** (BASKERVILLE), 1904, A., ii, 663.
- Betafite** (LACROIX), 1912, A., ii, 567.
- Betaine**, $C_{12}H_{21}O_6N_3$, from pyridine and 2-chloro-3:5-dinitrobenzoic acid (ZINCKE), 1910, A., i, 556.
- Betaine**, occurrence of, in the Chenopodiaceæ (STANĚK and DOMIN), 1910, A., ii, 336.
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- Betaine**, estimation of, in the products of sugar factories (STANĚK), 1905, A., ii, 562.
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- Betaines** (WILLSTÄTTER and KAHN), 1904, A., i, 560.
- occurrence of, in drugs containing caffeine and theobromine (POLSTORFF), 1910, A., ii, 234.
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- new, of the pyridine series (KIRPAL), 1908, A., i, 679.
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- Betainecarboxylic acid** and its amide and chloride (v. BRAUN), 1908, A., i, 608.
- Betainecarboxylic acids** and their amides (v. BRAUN), 1908, A., i, 607.
- Betasterol** from beetroot (RÜMPLER), 1903, A., i, 214, 418.
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- Betol**. See Salicylic acid, β -naphthyl ester.
- Bettendorf's reagent**, modified (FERRARO and CAROBBIO), 1906, A., ii, 490.
- Betula alba*, oil from (HAENSEL), 1909, A., i, 111.
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- Betulin** and its derivatives (TRAUBENBERG), 1912, A., i, 260, 972.
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- Beverages**, detection of "saccharin" in (VILLIERS, MAGNIER DE LA SOURCE, ROCQUES, and FAYOLLE), 1904, A., ii, 599.
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- Bianthrone**. See Dianthraquinone.
- Biazolones**, thio-. See Thiobiazolones.
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- Bidemethylnitrobrucine** hydrate, coloured isomeric salts of (LEUCHS and LEUCHS), 1910, A., i, 426.
- methonitrate (LEUCHS and ANDERSON), 1911, A., i, 1018.
- $\beta\beta'$ -Bi-diphenylacetylaldehydehydrazide** (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- 1-Bi-diphenylamino-2:5-dibenzhydryl-1:3:5-triazole**, acetyl derivative (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- 3:6-Bi-diphenylmethylene-3:6-dihydro-1:2:4:5-tetrazine** (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- Biguanide**, preparation of (OSTROGOVICH), 1911, A., i, 429.
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- Bilberry**, bio-chemical analysis of the (FICHTENHOLZ), 1912, A., ii, 108.
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- s*-Bis-*m*-aminophenylaminoethane and its tetra-acetyl derivative (BORSCHÉ and TITSINGH), 1908, A., i, 104.
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- Bisdiazodiphenyldisulphonic acid** (ELBS and WOHLFAHRT), 1903, A., i, 218.
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- Bisdiazoles**, formation of (STOLLÉ and MÜNCH), 1905, A., i, 95; (STOLLÉ and KIND), 1905, A., i, 96.
- Bisdiazomethane**, so-called (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 360.
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- iso*-**Bisdiazomethane**. See 1:4-Dihydro-tetrazine.
- Bisdiazotetrazolehydrazide** and its sodium derivative (HOFMANN and HOCK), 1911, A., i, 1048.
- Bisdibenzenesulphone-methylene-, -ethylene-, and -trimethylene-m-phenylenediamines and -trimethylene-p-phenylenediamine** (HINSBERG and KESSLER), 1905, A., i, 722.
- Bisdibenzoanthracene** and its tetrabromide (LIPPMANN and FRITSCH), 1907, A., i, 310.
- Bisdibenzylideneanthracene** (LIPPMANN and FRITSCH), 1904, A., i, 866.
- Bisdicinnamylideneacetone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.
- 1:3-Bisdi-p-dimethylaminophenylmethylbenzene**, 4-amino- (REITZENSTEIN and BREUNING), 1910, A., i, 441.
- Bisdiethoxyaceto-hydrazide** (BRUNO and MYLO), 1912, A., i, 162.
- Bisdiethoxydibenzylideneanthracene** (LIPPMANN and FRITSCH), 1907, A., i, 310.
- Bisdiethyl-acetyl- and -malonyl-methylenediamines** (EINHORN and MAURMAYER), 1906, A., i, 252.
- Bisdiethylcetrol** (HESSE), 1905, A., i, 139.
- Bisdiethylmalonhydrazinic acid** (FREUND and FLEISCHER), 1911, A., i, 236.
- Bisdiethylmalonyltetraaminoethane** (EINHORN and V. DIESBACH), 1908, A., i, 110; (EINHORN), 1908, A., i, 315.
- Bisdihydrodioscorine** (GORTER), 1911, A., i, 562.
- Bisdiketohydrindene** (*diphthalylethane*) (VOSWINCKEL), 1909, A., i, 166.
- Bisdiketohydrindene**, *di*bromo-, dianil-, *di*-o- and -*p*-tolils and bisphenylhydrazone of (REISSERT and ENGEL), 1905, A., i, 899.
- Bisdiketohydrindenones**, metallic derivatives of (HANTZSCH and LISTER), 1912, A., i, 871.
- Bisdiketohydrindeneacetophenone-o-carboxylic acid** (HANTZSCH and ZORTMAN), 1912, A., i, 873.
- Bis(4:5-dimethoxy-2- β -ethylamino-ethylbenzylidene)acetone** and its hydrochloride (PYMAN), 1909, T., 1747.
- Bis(4:5-dimethoxy-2- β -methylamino-ethylbenzylidene)acetone** and its dihydrochloride (PYMAN), 1909, T., 1274; P., 190.

- Bisdimethylacetylacetone**, *tetrathio*-, and its oxidation product (FROMM and ZIERSCH), 1906, A., i, 931.
- 2:5-Bisdimethylaminoanilo-3:4-diphenylcyclopentenone** (RUHEMANN and NAUNTUN), 1912, T., 45.
- 2:3-Bis(*p*-dimethylaminoanilo)- α -hydrindone**, hydrate of (RUHEMANN), 1910, T., 1445.
- 2:3-Bis(*p*-dimethylaminoanilo)-5:6-methylenedioxy-1-hydrindone**, hydrate of (RUHEMANN), 1912, T., 782.
- 3:3'-Bisdimethylamino-4:4'-dihydroxy-arsenobenzene** and its dihydrochloride (BERTHEIM), 1912, A., i, 819.
- 2:4-Bisdimethylaminophenyl- μ -cyano-4'-nitrophenylazomethine** (SACHS and APPENZELLER), 1908, A., i, 227.
- Bisdimethylisomamylcarbinol**, imino- (RIEDEL), 1908, A., i, 251.
- s-Bisdimethyldihydroresorcylic-*m*- and -*p*-phenylenediamines** and their hydrochlorides (HAAS), 1906, T., 392; P., 63.
- Bisdimethylethylcarbinol**, imino-, and its hydrochloride (RIEDEL), 1908, A., i, 251.
- Bis-2:3-dimethyl-1-ethylpyrrole** (*bis-haemopyrrole-e*), and its picrate (PILOTY and STOCK), 1912, A., i, 924.
- Bisdimethylfulvene** (THIELE and BALHORN), 1906, A., i, 639.
- Bisdimethylpyrone hydrogen tribromide** (HANTZSCH and DENSTORFF), 1906, A., i, 747.
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- Bis-2:3-dimethylpyrrole** and its picrate (PILOTY and THANNHAUSER), 1912, A., i, 736.
- N-Bis-2:5-dimethylpyrrole-3:4-dicarboxylic acid** and its ethyl ester (BÜLOW and SAUTERMEISTER), 1904, A., i, 690.
- Bisdinaphthacridine dihydride**. See *iso*Naphthacridine.
- β -N-B
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 -dinaphthacridine dihydride (SENIER and AUSTIN), 1907, P., 300.
- Bisdinaphthapyryl** (FOSSE), 1903, A., i, 49, 357.
- 4:6-Bisdinaphthaxanthylbenzene**, 1:3-dihydroxy-, and its diacetyl derivative (FOSSE and ROBYN), 1905, A., i, 607.
- p*-Bisdiphenyl**. See 4:4'-Diphenyldiphenyl.
- s-Bisdiphenylacetylhydrazide** and its chloride (STOLLÉ and LAUX), 1911, A., i, 508.
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- $\alpha\beta$ -Bisdiphenyl- $\alpha\beta$ -bisdiphenylene-ethane** and its peroxide (SCHLENK and HERZENSTEIN), 1910, A., i, 238.
- Bisdiphenylbromoacetylhydrazide** chloride (STOLLÉ and LAUX), 1911, A., i, 508.
- Bisdiphenylbutadiene**, oxidation of (RIIBER), 1904, A., i, 569.
- Bisdiphenylchloroacetylhydrazide** chloride (STOLLÉ and LAUX), 1911, A., i, 508.
- Bisdiphenylchlorovinylid-imide** (STOLLÉ and LAUX), 1911, A., i, 508.
- Bisdiphenyleneallene** (STAUDINGER), 1906, A., i, 861.
- Bisdiphenylene-ethane** (STAUDINGER), 1906, A., i, 824.
- Bisdiphenylene-ethane**, 2:2'-dibromo-, 2:2':7:7'- and 2:2':9:9'-tetrabromo-, 2:2':7:7':9:9'-hexabromo-, 9:9'-dichloro-, 9:9'-dichloro-2:2'-dibromo-, and 9:9'-dichloro-2:2':7:7'-tetrabromo- (SCHMIDT and WAGNER), 1912, A., i, 178.
- Bisdiphenylene-ethylene** (SMEDLEY), 1905, T., 1254; P., 221.
- Bisdiphenylene-ethylene**, 2:2-dibromo-, 2:2':7:7'-tetrabromo-, and 2:2':7:7'-tetrachloro- (SCHMIDT and WAGNER), 1912, A., i, 178.
- Bisdiphenylenemethylene-*p*-phenylenediamine** (REDDELIEN), 1910, A., i, 747.
- Bisdiphenylenesuccinic acid**, ethyl ester (STAUDINGER), 1906, A., i, 825.
- Bisdiphenylenetetrazen** (WIELAND, SÜSSER, and LECHER), 1912, A., i, 906.
- Bis-4:4'-diphenylmethyldiphenyl** (TSCHITSCHIBABIN), 1907, A., i, 503.
- 1:4-Bisdiphenylmethylene- $\Delta^{2:5}$ -cyclohexadiene**. See Tetraphenyl-*p*-xylylene.
- Bisdiphenylmethylene-*p*-phenylenediamine** (REDDELIEN), 1910, A., i, 747.
- 4:4'-Bis-1:3-diphenylpyrazole** (STOERMER and MARTINSEN), 1907, A., i, 447.
- Bisdistyryl ketone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.

- Bis-3:6-disulpho-*p*-naphtholazodi-*o*-tolylacetic acid** (HELLER and ASCHKENASI), 1910, A., i, 738.
- Bisdithiourethanes and their alkyl and piperidine derivatives** (BRAUN), 1910, A., i, 13.
- Bisditolyl^{iso}propyl phosphites** (BOYD), 1903, T., 1139; P., 202.
- Bis- α -ethylbutyrylhydrazide** (FREUND and FLEISCHER), 1911, A., i, 236.
- 3:3'-Bis-5-ethyl-1:2:4-triazole and its salts and 1-acetyl derivative** (RINMAN), 1905, A., i, 388.
- $\alpha\beta$ -Bis-[4-(or 5)-glyoxaline]-propionic acid dipicrate** (PYMAN), 1911, T., 2178.
- $\alpha\beta$ -Bis-[4-(or 5)-glyoxaline]-propionitrile, salts of** (PYMAN), 1911, T., 677.
- $\beta\gamma$ -Bis-[4-(or 5)-glyoxaline]-propylamine and its salts** (PYMAN), 1911, T., 2178; P., 275.
- Bishemopyrrole-*c***. See Bis-2:3-dimethyl-1-ethylpyrrole.
- Bishydrazo-*p*-tolil** (*di-p-tolylbishydrazomethylene*) (CURTIUS and KASTNER), 1911, A., i, 325.
- Bishydrazodiphenylmethane-4:4'-dicarboxylic acid, and its tetra-acetyl derivative** (DUVAL), 1910, A., i, 703.
- Bis-1-hydrindone-(2:2)-spiran** (RADULESCU), 1911, A., i, 498.
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- Bishydrocotarnines, isomeric, and their salts and derivatives** (FREUND and KUPFER), 1911, A., i, 911.
- Bis-*p*-hydroxybenzyl-*p*-cresol and its triacetate** (AUWERS and RIETZ), 1905, A., i, 887.
- Bis-5-hydroxy-4-ketopenthiophendithiophen** (APITZSCH and KELBER), 1910, A., i, 410.
- Bis-*m*-hydroxy- β -phenylpropionhydroxamic acid, β -hydroxylimino-** (POSNER), 1912, A., i, 455.
- Bis-5-hydroxy-2-piperidone-3:3-spirans** (LEUCHS and GIESELER), 1912, A., i, 715.
- Bishydroxypyridylcarbamide** (MILLS and WIDDOWS), 1908, T., 1382; P., 174.
- Bis-(4-hydroxyquinazoline-2)- β -phthaline** (BOGERT and HEIDELBERGER), 1912, A., i, 215.
- Bisiminopyrine**. See 4:4-Bis-1-phenyl-2:3-dimethylpyrazole, bis-2:5-imino-.
- Bisindandiones**. See Bisdiketohydrindenes.
- 3:3-Bisindole** (WAHL and BAGARD), 1909, A., i, 330.
- Bis-5-iodo-1-phenyl-3-methylpyrazole methiodide** (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 733.
- m*-Bisketo-2-phenylbenzotriazine** (PIERON), 1908, A., i, 925.
- Bisketophenylthionaphthen** (KALLE & Co.), 1911, A., i, 667.
- Bisketotolylthionaphthen** (KALLE & Co.), 1911, A., i, 667.
- Bismarck-brown, rate of formation of** (VELEY), 1909, T., 1189; P., 175.
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- 5:5-Bis-*p*-methoxyphenylthiohydantoin** (BILTZ, KREBS, and SEYDEL), 1909, A., i, 526.
- Bismethylacetylacetone, trithio-, and its oxidation products** (FROMM and ZIERSCH), 1906, A., i, 931.
- Bis(2- β -methylaminoethylbenzylidene)-acetone and its dihydriodide** (PYMAN), 1909, T., 1750.
- Bismethylaminothiocarbamide** (MICHAELIS and HADANCK), 1908, A., i, 1020.
- 4:4'-Bis-5-methylanilino-1-phenyl-3-methylpyrazole** (*bis- ψ -anilopyrine*) (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 734.
- Bismethylanilinoquinone** (MÜHLAU and REDLICH), 1912, A., i, 129.
- Bis-1-methylanthracene** (FISCHER and ZIEGLER), 1912, A., i, 755.
- Bis-*p*-methylbenzylidene- $\alpha\alpha'$ -lutidine**. See 2:6-Di-*p*-methylstyrylpyridine.
- Bisapomethylbrucine and its derivatives** (LEUCHS and ANDERSON), 1911, A., i, 746.
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- Bismethylcarbamidothiocarbamide** (MICHAELIS and HADANCK), 1908, A., i, 1020.
- 1:2'-Bis(5-methylcoumaran)-indigo**. See 5:5'-Dimethylloxindirubin.
- Bismethylcoumarones** (FRIES and FINCK), 1909, A., i, 44.
- Bisapomethyldehydrobrucine nitrate, nitro-** (LEUCHS and ANDERSON), 1911, A., i, 1018.
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- Bismethylenedioxyhydrindantin** (RUHEMANN), 1912, T., 787.
- Bismethylenedioxyindigotin** (*viperonal-indigo*), by-products from the preparation of, and its oxidation (HERZ), 1905, A., i, 778.

- Bismethylenedioxyindigotin**, *tetra*-chloro- (HAYDUCK), 1903, A., i, 827.
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- 4:4'-Bismethylhydrazinodiphenylmethane**. See Diphenylmethanedimethylhydrazine.
- 4-Bis-3-methylpyrazolone**, Curtius's. See 3:6-Dimethyldihydropyridazine-4:5-dicarboxylic acid, cyclohydrazide.
- Bis-6-methyltetrahydroquinolinoquinone** (MÖHLAU and REDLICH), 1912, A., i, 129.
- 4:4'-Bis-5-methylthiol-1-phenyl-3-methylpyrazole** (*bis-ψ-thiopyrine*) and its sulphone (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 733.
- 3:3'-Bis-5-methyl-1:2:4-triazole** and its salts and its 1-acetyl derivative (RINMAN), 1905, A., i, 388.
- Bismite** (SCHALLER and RANSOME), 1910, A., ii, 220.
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- estimation of, iodometrically, by chromate (RUPP and SCHAUMANN), 1903, A., ii, 110.
- estimation of, volumetrically (EHRENFELD), 1908, A., ii, 72; (BAL-VOINE), 1908, A., ii, 990; (EHRENFELD and INDRA), 1909, A., ii, 270; (VASSALLO), 1911, A., ii, 1139.
- critical studies on (MOSER), 1907, A., ii, 403.
- as molybdate, and its separation from copper (RIEDERER), 1903, A., ii, 762.
- estimation of small quantities of (ROWELL), 1908, A., ii, 325.
- estimation of, minute quantities of, in copper and copper ores (CLOUD), 1904, A., ii, 518.
- estimation of, by precipitation as molybdate (MILLER and CRUSER), 1905, A., ii, 353.
- estimation of, as phosphate and its separation of, from cadmium and copper (MOSER), 1906, A., ii, 199.
- estimation of, in alloys and slags (NAMIAS), 1908, A., ii, 326.
- estimation of, in "bismuthum tribromophenylicum" (SCHLENK), 1909, A., ii, 705.
- estimation of, and separation of, from the heavy metals (STÄHLER and SCHARFENBERG; SALKOWSKI and SENDHOFF), 1906, A., ii, 55.
- and mercury, estimation and separation of, by the sodium phosphate method (STÄHLER), 1907, A., ii, 655.
- separation of, from lead (JANNASCH and HEIMANN), 1907, A., ii, 197; (GALLETT and HENDERSON), 1909, A., ii, 833.
- Bismuth ion**, bivalent, existence in aqueous solution of a (DENHAM), 1908, T., 833; P., 76.
- Bismuth ochres** from California (SCHALLER), 1911, A., ii, 293.
- Bismuth ores** (PRIWOZNIK), 1911, A., ii, 991.
- Bismuthides** (VOURNASOS), 1911, A., ii, 405; 1912, A., ii, 54; (LEBEAU), 1911, A., ii, 405.
- Bismuthite** from Mexico (HEADDEN), 1906, A., ii, 38.
- Bismuthogallic acid**, constitution and derivatives of (THIBAUT), 1903, A., i, 633.
- Bismuthoprotocatechuic acid** and its alkali salts and anilide (THIBAUT), 1904, A., i, 320.

- Bismuthopyrogallolcarboxylic acid** and its salts (THIBAUT), 1903, A., i, 701.
- Bismuthose** (KALLE & Co.), 1904, A., i, 790.
- Bismuthotannic acid** and its aniline and sodium salts (THIBAUT), 1903, A., i, 761.
- Bismuthous compounds**. See under Bismuth.
- Bisnaphthacoumaranone** (RUHEMANN), 1903, T., 1133; P., 202.
- 2:4-Bis- α -naphthaleneazoresorcinol**, and its diacetyl derivative (ORNDORFF and RAY), 1910, A., i, 597.
- Bis-1:8-naphthaphenthiofen** (FRIEDLÄNDER, ECKSTEIN, and VOROSCHTSOFF), 1912, A., i, 294.
- Bis- α -naphthaquinone-anil and -oxime** (A. and H. v. EULER), 1906, A., i, 370.
- N:N'-Bis- α -naphthaquinonyl-2-benzidine** (BRASS), 1912, A., i, 874.
- Bisnaphtharonyl**, reduction of (RUHEMANN), 1903, T., 1133; P., 202.
- Bis-1:8-naphthathiophen** (FRIEDLÄNDER and VOROSCHTSOFF), 1912, A., i, 293.
- Bis-2:3-naphthathiophen** (FRIEDLÄNDER and VOROSCHTSOFF), 1912, A., i, 293; (FRIEDLÄNDER, ECKSTEIN and VOROSCHTSOFF), 1912, A., i, 294.
- Bis-1:2- and -2:1-naphthathiophens** (FRIEDLÄNDER, ECKSTEIN and VOROSCHTSOFF), 1912, A., i, 295.
- Bis- β -naphtholazodi-*o*-tolylacetic acid** (HELLER and ASCHKENASI), 1910, A., i, 738.
- Bis- β -naphthylthiophthalide** (TRÖGER and HORNUNG), 1903, A., i, 95.
- Bis-2-nitro-4-aminobenzoylhydrazide** (CURTIUS, BOLLENBACH, and CLEMM), 1907, A., i, 1078.
- s-Bis-3-nitro-5-aminobenzoylhydrazide** (CURTIUS and RIEDEL), 1907, A., i, 971.
- Bis-2-nitro-4-aminophenylcarbamide** (CURTIUS, BOLLENBACH, and CLEMM), 1907, A., i, 1079.
- Bisnitrobenzeneazobenzene** (GREEN and BEARDER), 1911, T., 1971; P., 229.
- 4:4'-Bis-*o*-nitrobenzeneazooxybenzene** (BORSCHKE), 1908, A., i, 67.
- Bis-*o*-nitrobenzeneazoo-*o*-cresol** (BORSCHKE), 1908, A., i, 66.
- 2:4-Bis-*o*-nitrobenzeneazophenol** (BORSCHKE), 1908, A., i, 66.
- Bis-*p*-nitrobenzeneazophenol** (GRANDMOUGIN, GUISAN, and FREIMANN), 1907, A., i, 987.
- 4:6-Bisnitrobenzoylhydrazide** (CURTIUS and RIEDEL), 1907, A., i, 970.

- s-Bis-3-nitro-5-hydroxyphenylcarbamide** (CURTIUS and RIEDEL), 1907, A., i, 971.
- Bis-*p*-nitrophenoxyacetic acid and its esters** (BISCHOFF), 1907, A., i, 775.
- Bisnitrophenoxyethanetetra-carboxylic acids, esters** (BISCHOFF), 1907, A., i, 774.
- Bisnitrophenoxymalonic acids, esters** (BISCHOFF), 1907, A., i, 774.
- s-Bis-*m*- and -*p*-nitrophenylaminoethanes** (BORSCHKE and TITSINGH), 1908, A., i, 104.
- Bis-2:4-dinitrophenyldianthranilide** (SCHROETER and EISLER), 1909, A., i, 576.
- Bis-2:4:6-trinitrophenyl-*p*-phenylenediamine** (MORGAN and MICKLETHWAIT), 1908, T., 609.
- Bis-6-nitropiperonylidenebenzidine** (TORREY and CLARKE), 1909, A., i, 421.
- Bis-*m*- and -*p*-nitrosoacetanilides** (CAIN), 1908, T., 682.
- Bisnitroso-benzoylacetone, -benzoyl-*p*-anisoylmethane, and -dibenzoylmethane and their oximes** (WIELAND and BLOCH), 1904, A., i, 596.
- Bisnitroso-compounds, relation between arylnitrosohydroxylamines and** (BAMBERGER), 1911, A., i, 996.
- Bis-4-oximino-5-pyrazolone** (CURTIUS and GOCKEL), 1911, A., i, 403.
- Bisoxindone derivatives** (HANTZSCH and LISTER), 1912, A., i, 871.
- Bisoxynaphthene-ethane** (BETTI and MUNDICI), 1907, A., i, 322.
- 2:2'-Bisoxyselenonaphthen (*selenindigo*)** (LESSER and WEISS), 1912, A., i, 643.
- Bisoxythionaphthen ("thioindigo"), synthesis of** (PRESCOTT and SMILES), 1911, P., 317.
- diacetyl and benzoyl derivatives** (BÉCHAMP), 1909, A., i, 600.
- halogen derivatives of** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 410.
- oxidation products of** (DANAILA), 1910, A., i, 411.
- substituted** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 251.
- Bisoxythionaphthen, 6:6'-diamino-** (KALLE & Co.), 1912, A., i, 126.
- chloro-, preparation of** (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1911, A., i, 481.
- 2:3'-Bisoxythionaphthen (2:3-bisthionaphthenindigotin)** (FRIEDLÄNDER), 1908, A., i, 673.
- Bisphenetoleazobenzaldazinedisulphonic acid, potassium salt** (GREEN and SEN), 1910, T., 2247.
- Bisphenetoleazosulphobenzylidenebenzidine, potassium salt** (GREEN and SEN), 1910, T., 2247.
- Bisphenetoleazosulphobenzylidene-*p*-phenylenediamine, potassium salt** (GREEN and SEN), 1910, T., 2247.
- Bisphenylallyl ozonide** (HARRIES and V. RIEDENSTEIN), 1912, A., i, 674.
- Bis-*N*-phenylbenzaldoxime hydrogen triiodide and the *N*-, *m*-, and *p*-tolyl derivatives** (BECKMANN, EBERT, NETSCHER, and SCHULZ), 1909, A., i, 653.
- Bisphenyl-*tert*-.butylpyrazolone** (WAHLBERG), 1911, A., i, 708.
- Bisphenyldimethylcarbinol, imino-** (RIEDEL), 1908, A., i, 251.
- 4:4'-Bis-1-phenyl-2:3-dimethylpyrazole, bis-2:5-imino-(*bisiminopyrine*) and its additive and dibenzensulphonyl compounds** (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 734.
- bis-2:5-sulphido-(*bisthiopyrine*) and its additive compounds and trioxide** (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 733.
- Bisphenylenebis- $\beta\beta$ -naphthylene-ethylene** (THIELE and WANSCHIEDT), 1910, A., i, 832.
- Bis-*m*-phenylenedisulphonylhydroxylamine** (FICHTER and TAMM), 1910, A., i, 836.
- Bis- β -phenyl- α -ethylpropionatehydroxamic acid, hydroxylimino-, methyl ester** (POSNER and STIRNUS), 1912, A., ii, 456.
- Bisphenylmalononitrile and its silver salt and alkyl derivatives** (HESSLER), 1908, A., i, 182.
- 4:4'-Bis-1-phenyl-3-methylpyrazole and its salts** (STOERMER and MARTINSEN), 1907, A., i, 447.
- Bis-1-phenyl-3-methyl-5-pyrazolone, pyrimines from** (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 731.
- Bis-1-phenyl-5-methyl-3-pyrazolonyl-4-thiocarbamide** (MICHAELIS and KOTELMANN), 1907, A., i, 155.
- 3:3'-Bis-1-phenyl-5-methyl-1:2:4-triazole** (RINMAN), 1905, A., i, 388.
- Bisphenylisooxazononemesoxalic acid ethyl ester, and its metallic salts and derivatives** (MEYER), 1910, A., i, 593.
- Bisphenylphthalazonylethane and its di-*p*-nitro and diunitro-nitroso-derivatives** (REISSERT and ENGEL), 1905, A., i, 899.

- Bisphenylpropylpyrazolone** (BOUVEAULT and BONGERT), 1903, A., i, 144.
- Bisphenyl styryl ketone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PRON, and SCHWARZKOPF), 1911, A., i, 791.
- Bisphenyl-sulphone- and -thiophthalides** (TRÖGER and HORNING), 1903, A., i, 95.
- 3:3'-Bis-1- and -5-phenyl-1:2:4-triazoles** (RINMAN), 1905, A., i, 387.
- 3:3'-Bis-5-isopropyl-1:2:4-triazole and its salts and 1-acetyl derivative** (RINMAN and STAHL), 1905, A., i, 388.
- Bis-6-sulpho- β -naphtholazodi-*o*-tolyl-acetic acid** (HELLE and ASCHKEN-ASI), 1910, A., i, 738.
- Bistetrahydroquinolinoquinone** (MÖHLAU and REDLICH), 1912, A., i, 129.
- s-Bistetrahydroquinolylpentamethylenediamine and its picrate** (v. BRAUN), 1908, A., i, 678.
- Bistetramethyl-di-*p*-aminobenzophenone-thiocarbohydrazide** (CURTIUS and KOF), 1912, A., i, 732.
- Bistetrazyl, dihydroxy-** (WIELAND), 1909, A., i, 885.
- Bis-*o*-thioacetophenone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 987.
- Bisthiocodide and -morphide** (PSCHORR and VOGTHERR), 1906, A., i, 877.
- 3:3-Bisthiohydantoin** (FRERICHS and FÖRSTER), 1910, A., i, 191.
- Bis-5-thio-1-phenyl-3-methylpyrazolone and its methiodide** (MICHAELIS and PANDER), 1908, A., i, 690.
- 3-Bis-5-thio-1-phenylpyrazolone-4-*p*-azotoluene** (MICHAELIS and SIMON), 1905, A., i, 396.
- Bisthiopyrine.** See 4:4'-Bis-1-phenyl-2:3-dimethylpyrazole, bis-2:5-sulphido.
- Bis- ψ -thiopyrine.** See 4:4'-Bis-5-methylthiol-1-phenyl-3-methylpyrazole.
- Bis-*p*-toliliketazine** (CURTIUS and KASTNER), 1911, A., i, 325.
- Bis-*p*-tolueneazoharmaline** (FISCHER and BOESLER), 1912, A., i, 645.
- 4:4'-(or 2:2')-Bis-*p*-tolueneazo-3:5:3':5'-tetrahydroxydiphenyl** (R. and K. MEYER), 1911, A., i, 873.
- Bis-*o*-, -*m*-, and -*p*-tolueneazophenols and their acetyl derivatives** (GRANDMOUGIN and FREIMANN), 1908, A., i, 1023.
- 2:4-Bis-*o*- and -*p*-tolueneazoresorcinol and their diacetyl derivatives** (ORNDORFF and RAY), 1910, A., i, 597.
- 4:6-Bis-*o*-, and -*p*-tolueneazoresorcinol, diacetyl derivatives of** (ORNDORFF and RAY), 1910, A., i, 597.
- Bis-*o*-tolueneazosalicylic acid and its acetyl derivative** (GRANDMOUGIN, GUISSAN, and FREIMANN), 1907, A., i, 987.
- Bis-*o*-, -*m*-, and -*p*-tolueneazosalicylic acids** (GRANDMOUGIN and FREIMANN), 1908, A., i, 1024.
- Bis-*o*-toluidinomesoxalic acid, methyl ester** (SCHMITT), 1907, A., i, 1007.
- Bis-*p*-toluoyl-*p*-tolylazimethylene** (CURTIUS and KASTNER), 1911, A., i, 325.
- Bis-*N*-*o*-tolylanisaldoxime hydrogen tri- and penta-iodide** (BECKMANN, EBERT, NETSCHER, and SCHULZ), 1909, A., i, 653.
- Bis-*p*-tolylsulphonephthalide** (TRÖGER and HORNING), 1903, A., i, 95.
- Bistolythiogollic acid** (KALLE & Co.), 1911, A., i, 667.
- Bistriazoacetic acid, ethyl ester** (FORSTER, FIERZ, and JOSHUA), 1908, T., 1073; P., 102.
- $\alpha\alpha$ -Bistriazoacetoacetic acid, ethyl ester** (FORSTER and NEWMAN), 1910, T., 1367; P., 197.
- m*-Bistriazobenzene** (FORSTER and FIERZ), 1907, T., 1953.
- p*-Bistriazobenzene, preparation of** (SILBERRAD and SMART), 1906, T., 170; P., 14.
- $\alpha\gamma$ -Bistriazo- β - and - γ -chloropropanes** (FORSTER and WITHERS), 1912, T., 494; P., 50.
- 1:2-Bistriazoethane and the action of magnesium phenyl bromide on** (FORSTER, FIERZ, and JOSHUA), 1908, T., 1071; P., 102.
- 3:3'-Bis-1:2:4-triazole and its salts and 5-hydroxy-** (RINMAN), 1905, A., i, 388.
- 3:3'-Bis-1:2:4-triazole-5-carboxylic acid and its potassium salts, and benzoyl and acetyl derivatives** (RINMAN), 1905, A., i, 389.
- Bistriazole compounds** (RINMAN), 1905, A., i, 387.
- Bistriazomalonic acid, ethyl ester and amide** (FORSTER and MÜLLER), 1910, T., 137; P., 4.
- 2:7-Bistriazonaphthalene (naphthylene-2:7-bisazotimide)** (MORGAN and MICKLETHWAIT), 1910, T., 2560; P., 293.
- $\alpha\gamma$ -Bistriazo-*n*- and isopropyl alcohols** (FORSTER and WITHERS), 1912, T., 493; P., 50.
- $\alpha\gamma$ -Bistriazopropylene** (FORSTER and WITHERS), 1912, T., 495; P., 50.

- Bistrimethylenedipiperidinium chloride** (HÖRLEIN and KNEISEL), 1906, A., i, 458.
- Bistrimethylethylene nitrosate**, decompositions of (SCHMIDT and AUSTIN), 1903, A., i, 2.
- Bistrimethylphenonaphthacridine hexabromide** (SENIER and AUSTIN), 1907, T., 1242; P., 185.
- Bistriphenylmethyl** (VORLÄNDER), 1904, A., i, 659.
- Bistriphenylmethylhydroxylamine** (MOTHWURF), 1904, A., i, 877.
- Bistri-*p*-tolylmethylhydroxylamine** (MOTHWURF), 1904, A., i, 879.
- Bisxylyleneaminodimethylaminotriphenylmethane** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- Bisxylyleneaminodiphenylmethane** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- Bisxylyleneaminodiphenylstyrylmethane** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- Bisxylyleneaminodi-*m*-tolylmethane** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- Bisxylyleneaminotriphenylmethane** (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
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- Biuret**, acid product of the synthesis of, by ethyl cyanoacetate, and cyanuric acid, and their salts, comparative crystallography of (BILLOWS), 1909, A., i, 462.
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- Biurets**, *dithio-* (FROMM and SCHNEIDER), 1906, A., i, 656.
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- Biurets**, *ψ-dithio-* (JOHNSON, BRISTOL, CRAMER, and ELMER), 1903, A., i, 751.
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- isoBixin** (VAN HASSELT), 1909, A., i, 598.
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- "Black alkali,"** estimation of, in irrigating waters and soil extracts (SKINNER), 1906, A., ii, 251.
- Blackberry-seed oil** (KRŽIŽAN), 1908, A., ii, 239.
- Black coating** for laboratory benches, etc., resisting acids and alkalis (JEAN), 1904, A., ii, 611.
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- Bladder**, action of adrenaline on the (ELLIOTT), 1904, A., ii, 832.
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- Bladder-stones** from natives of Asia Minor (ABDERHALDEN and HANSLIAN), 1912, A., ii, 962.
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- Bleaching and polymerisation** (STOBBE and EBERT), 1911, A., ii, 452.
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- Bleaching liquors**, relation of stability to electrochemical efficiency in the production of (DIGBY), 1906, A., ii, 265.
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- estimation of carbon dioxide in (PHILOSOPHOFF), 1907, A., ii, 908.
- Blende** from Picos de Europa, composition of (LORD Y GAMBOA), 1911, A., ii, 733.
- from Russia (NENADKEWITCH), 1903, A., ii, 378.
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- Blomstrandine** from the Norwegian pegmatite-veins (BRÖGGER), 1907, A., ii, 885.
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- ψ -**Butylenechlorohydrin** (KRASSUSKY), 1907, A., i, 999.
- iso***Butylenechlorohydrin** (MICHAEL and LEIGHTON), 1906, A., i, 551, 781.
- Butylenediamine**. See Butane, diamino-.
- Butylenedicarboxylic acids**. See Allylmalonic acids, Methylaticonic acid, β -Methylglutaconic acids, Methylitaconic acid, Methylmesaconic acid, and Propyldenemalonic acid.
- $\Delta\alpha$ -**Butylene- $\gamma\delta$ -diol**, and its diphenylurethane (PARISELLE), 1910, A., i, 463.
- iso***Butylenedisulphonic acid** and its salts (BISTRZYCKI and MAURON), 1907, A., i, 1039.
- Butylene- $\alpha\delta$ -dithiol** and its benzoyl derivative (BRAUN), 1910, A., i, 14.
- Butylene glycol** (KLING), 1904, A., i, 2. See also Butane- $\alpha\gamma$ -diol.
- iso***Butylene glycol**, preparation of (HENRY), 1907, A., i, 745.
- $\beta\gamma$ -**Butylene glycol**, production of (HARDEN and WALPOLE), 1906, A., ii, 380. production of, by bacteria (HARDEN and NORRIS), 1912, A., ii, 282, 474; (THOMPSON), 1912, A., ii, 282. production of, from sugar by *Bacillus subtilis* (LEMOIGNE), 1912, A., ii, 1199. derivatives of (CIAMICIAN and SILBER), 1911, A., i, 514.
- Butylene nitrosite** (DEMJANOFF), 1907, A., i, 174.
- $\Delta\alpha$ -**Butylene- γ -one- $\alpha\delta\delta$ -tricarboxylic acid**, $\alpha\beta$ -dibromo-, and its diethyl hydrogen ester (DIELS and REINBECK), 1910, A., i, 360.
- iso***Butylene $\alpha\beta$ -oxide** (RIEDEL), 1908, A., i, 956. and its reaction with hydrogen chloride (HENRY), 1906, A., i, 228; (MICHAEL and LEIGHTON), 1906, A., i, 781.

- iso*-Butylene $\alpha\beta$ -oxide, addition of hydrogen chloride to (HENRY), 1907, A., i, 7; (KRASSUSKY), 1907, A., i, 459.
- $\Delta\gamma$ -Butylene oxide, α -bromo- (PARISELLE), 1909, A., i, 691.
- $\alpha\beta$ -Butyleneoxide- δ -carboxylic acid, amyl, ethyl and methyl esters (LEUCHS, GIUA, and BREWSTER), 1912, A., i, 604.
- Butylene oxozonide, and ozonide (HARRIES and EVERS), 1912, A., i, 673.
- Butylenepentacarboxylic acid. See *aa*-Dicarboxy- α -methylaconitic acid.
- Butylenetetracarboxylic acid. See Ethyldenedimalonic acid.
- Butylenetricarboxylic acids. See Methylaconitic acids.
- ψ -Butylethylene glycol and its dibromide (CLAESSENS), 1909, A., i, 127.
- iso*-Butylethylenimine and its compound with hydrogen cyanide (HENRY), 1904, A., i, 854.
- β -cyclo-Butylformylacetic acid, α -cyano-, ethyl ester and silver salt of (CAMPELL and THORPE), 1910, T., 2424.
- 1-*iso*-Butylgeraniol (AUSTERWEIL and COCHIN), 1910, A., i, 687.
- β -*n*- and -*iso*-Butylglucosides (BOURQUELOT and BRIDEL), 1912, A., i, 790.
- α -Butylglutaric acid, γ -cyano-, ethyl ester (BLAISE and LUTTRINGER), 1905, A., i, 628.
- β -*iso*-Butylglutaric acid and *aa*-dicyano- (KNOEVENAGEL), 1905, A., i, 169.
- β -*iso*-Butylglycerol $\alpha\gamma$ -dialkyl ethers (SOMMELET), 1907, A., i, 108.
- 4(or 5)-Butylglyoxaline, γ -amino-, and γ -oximino- and their pierates (PYMAN), 1911, T., 2176; P., 275.
- 5-*tert*.-Butylglyoxaline, 2-hydroxy- (WIDMAN and WAHLBERG), 1911, A., i, 703.
- α -*iso*-Butylisohexaldehyde, its oxime and semicarbazone (FREYDON), 1910, A., i, 359.
- Butylcyclohexane, derivatives of (DARZENS and ROST), 1911, A., i, 290.
- tert*.-Butylcyclohexan-4-ol (DARZENS and ROST), 1911, A., i, 290.
- tert*.-Butylcyclohexan-4-one and its semicarbazone (DARZENS and ROST), 1911, A., i, 290.
- α -*iso*-Butylhexoic acid and its brucine salt (FISCHER, HOLZAPFEL, and v. GWINNER), 1912, A., i, 157.
- n*-Butylhexylcarbinol and its acetyl derivative (BYRTSCHENKO), 1911, A., i, 1.
- n*-Butyl hexyl ketone and its semicarbazone (BYRTSCHENKO), 1911, A., i, 2.
- ψ -Butylhippuric acid, ethyl ester (RICHARD), 1911, A., i, 7.
- iso*-Butylhydantoic acid (HUGOUNENQ and MOREL), 1905, A., i, 178, 332; (LIPPICH), 1906, A., i, 813.
- d*-*iso*-Butylhydantoic acid (DAKIN), 1910, A., i, 590.
- Butylhydantoin, tetrahydroxy-, *N*-phenyl derivative of (NEUBERG and WOLFF), 1903, A., i, 74.
- iso*-Butylhydantoin (HUGOUNENQ and MOREL), 1905, A., i, 178, 332.
- l*-*iso*-Butylhydantoin (DAKIN), 1910, A., i, 590.
- α -Butylhydroacrylic acid and its benzylamine salt and ethyl ester (BLAISE and LUTTRINGER), 1905, A., i, 505.
- α -Butylhydrocotarnine and its salts (FREUND and LEDERER), 1911, A., i, 910.
- 1-*iso*-Butylhydrocotarnine and its additive salts (FREUND and REITZ), 1906, A., i, 601.
- α -Butylhydrohydrastinine and its salts (FREUND and LEDERER), 1911, A., i, 907.
- α -*iso*-Butylhydrohydrastinine and its salts (FREUND and LEDERER), 1911, A., i, 907.
- tert*.-Butylhydroxylamine (BAMBERGER and SELIGMAN), 1903, A., i, 322.
- iso*-Butylidene diacetate (WEGSCHEIDER and SPÄTH), 1910, A., i, 155.
- Butylidenebisacetoacetic acids, *n*- and -*iso*-, menthyl esters, rotation of (HANN and LAPWORTH), 1904, T., 53.
- Butylidenebis-3-aminophenyl- α -camphoric acid, trichloro- (WOOTTON), 1910, T., 410.
- Butylidenebis-1-phenyl-3-methylpyrazolone and its anhydro-base (MICHAELIS and ZILG), 1906, A., i, 218.
- iso*-Butylidenecamphor and its nitrosate (HALLER and MINGUIN), 1906, A., i, 594.
- iso*-Butylidene-diacetamide and diformamide (REICH), 1905, A., i, 35.
- iso*-Butylidenediacetoneamine. See 2:2 Dimethyl-6-*isopropyl*piperidone.
- n*-Butylidenediurethane (DOURIS), 1911, A., i, 949.
- iso*-Butylidenelævulic acid and its ethyl ester, salts, and dibromide (MEINGAST), 1905, A., i, 319.
- sec*.-Butylidenequinone, *penta*- and *hexa*-bromo- (ZINCKE and GOLDEMANN), 1903, A., i, 781.
- n*- and *n*-*sec*.-Butyldenetetramethyldiaminodiphenylmethane (LEMOULT), 1911, A., i, 399.

- C*-iso-Butyliminodiacetic acid, and its ethyl ester and its nitroso-compound, nitrile ester and its hydrochloride, and lead salt (STADNIKOFF), 1909, A., i, 772.
- 2-*tert*-Butylindole and its picrate (PLANCHER and FORGHIERI), 1903, A., i, 114.
- isoButylisocindolone (BÉIS), 1904, A., i, 503.
- isoButylitaconic acid, action of bromine on (FITTIG and SHEEN), 1904, A., i, 555.
- dibromide (FITTIG and KRAENCKER), 1904, A., i, 556.
- Butylmalonic acid, δ -cyano-, and its silver salt (BEST and THORPE), 1909, T., 704.
- sec-Butylmalonic acid, α -bromo- (EHR- LICH), 1908, A., i, 396.
- isoButylmalonic acid, dimethyl and di- ethyl esters, and its dichloride and diamide (FREYLOD), 1910, A., i, 358.
- isoButylmalonic acid, α -bromo- (FIS- CHER and SCHMITZ), 1906, A., i, 182.
- isoButylmesitylene and its sulphonic acid (KLAGES and STAMM), 1904, A., i, 483.
- n*-Butylnaphthalenes, α - and β -, and their picrates (BARGELLINI and MELACINI), 1908, A., i, 775.
- isoButylnaphthalenes, α - and β -, pre- paration of (DARZENS and ROST), 1908, A., i, 411.
- m*-Butylolanisole and its phenylureth- ane (KLAGES), 1904, A., i, 1004.
- r*-sec-Butyloxamic acid (URBAN), 1904, A., i, 375.
- 3-*tert*-Butylisooxazole-5-carboxylic acid, ethyl ester (COUTURIER), 1910, A., i, 362.
- Butyloxy-. See Butoxy-.
- Butylisopapaverine (DECKER and KLAUSER), 1904, A., i, 1045.
- isoButylparabanic acid (NÄGELE), 1912, A., i, 795.
- isoButylparaconic acid, bromo- (FITTIG and KRAENCKER), 1904, A., i, 556.
- 2-Butylperimidine and its hydrochloride (SACHS and STEINER), 1909, A., i, 970.
- o*-Butylphenetole (KLAGES), 1904, A., i, 1004.
- p*-sec-Butylphenol, ψ -bromides and quinones of (ZINCKE and GOLDE- MANN), 1908, A., i, 780.
- constitution of the bromides of (ZINCKE), 1912, A., i, 443.
- p*-*tert*-Butylphenol, decomposition of (ANSCHÜTZ and RAUFF), 1903, A., i, 555.
- p*-*tert*-Butylphenol, and 2:6-di-bromo- (LEWIS), 1903, T., 329; P., 41.
- 4-*tert*-Butylphenol-6-sulphonic acid, 2- bromo-, potassium salt (LEWIS), 1903, T., 330; P., 41.
- 1-isoButylphthalazine and its additive salts and 4-iodo- (WÖLBLING), 1906, A., i, 48.
- Butylphthalimide, δ -iodo- (GABRIEL), 1909, A., i, 492.
- 1-isoButylphthalimidine (WÖLBLING), 1906, A., i, 48.
- 1-Butylpiperidine and the action of cyanogen bromide on (V. BRAUN), 1907, A., i, 961.
- 1-Butylpiperidine, δ -chloro-, hydro- chloride of (GABRIEL and COL- MAN), 1907, A., i, 237.
- hydrochloride aurichloride and picrate, and δ -bromo-, hydro- bromide (ALBERT), 1909, A., i, 178.
- 2-Butylpiperidine and its salts, and β - hydroxy- (LÖFFLER and PLÖCKER), 1907, A., i, 438.
- Butylpropionic acid. See α -Heptinoic acid.
- α -Butylpropionic acid. See Methyl- hexoic acid.
- β -cycloButylpropionic acid, β -imino- α - cyano-, ethyl ester (CAMPBELL and THORPE), 1910, T., 2424.
- 3-isoButylpyrazolone (BOUVEAULT and BONGERT), 1903, A., i, 143.
- α -Butylpyridine and its salts (LÖFFLER and PLÖCKER), 1907, A., i, 438.
- β -hydroxy-, and its reactions (LÖFFLER and PLÖCKER), 1907, A., i, 437.
- 2-*tert*-Butylpyridine, di- ω -hydroxy-, and its salts (LÖFFLER and GROSSE), 1907, A., i, 439.
- 4-*tert*-Butylpyridine and its salts (KOE- NIGS and HAPPE), 1903, A., i, 851.
- 1-isoButylpyridinium salts (DECKER, KAUFMANN, SASSU, and WISLOKI), 1911, A., i, 1024.
- 1-isoButyl-2-pyridone (DECKER, KAUF- MANN, SASSU, and WISLOKI), 1911, A., i, 1024.
- 2-Butylpyridonium salts (LÖFFLER and PLÖCKER), 1907, A., i, 438.
- 2-Butylpyrrolidine and its derivatives (BLAISE and HOUILLON), 1906, A., i, 693.
- 3-*n*-Butyl-4-quinazolone (BOGERT and MAY), 1909, A., i, 329.
- n*-Butylisoquinolinium iodide (WEDE- KIND and NEY), 1912, A., i, 501.
- 3-isoButylrhodanin (NÄGELE), 1912, A., i, 795.

- n*- and *iso* Butylsilicanes, trichloro- (BYGDEN), 1911, A., i, 846.
- ψ -Butyltartronic acid, ethyl ester, amide of (RICHARD), 1911, A., i, 8.
- 2-*n*-Butyltetrahydroisoquinoline (WEDEKIND and NEY), 1912, A., i, 501.
- 2-*n*-Butyltetrahydroisoquinolinium acetic acid iodide, *l*-menthyl ester (WEDEKIND and NEY), 1912, A., i, 501.
- 5-Butyltetrolloxazoline, 2-thiol- (ROUX), 1904, A., i, 292.
- ψ -*iso*Butylthiocarbamide hydrobromide (WHEELER and BRISTOL), 1905, A., i, 482.
- sec*.-Butylthiocarbamides, *d*- and *l*- (THOMÉ), 1903, A., i, 321.
- Butylthiohydantoic acid, tetrahydroxy-, *N*-phenyl derivative of (NEUBERG and WOLFF), 1903, A., i, 74.
- iso*Butylthiolcarbamie acid, derivatives and salts of (ANSCHÜTZ), 1908, A., i, 327.
- 5-*iso*Butylthiol-1-phenyl-3-methylthiazole (*isobutyl- ψ -thiopyrine*) (MICHAELIS, BESSON, MOELLER, and KOBER), 1904, A., i, 788.
- iso*Butylthioparabanic acid (NÄGELE), 1912, A., i, 795.
- 2-Butylthiophen, influence of light and heat on the chlorination and bromination of (OPOLSKI), 1906, A., i, 33.
- iso*Butyl- ψ -thiopyrine. See 5-*iso*Butylthiol-1-phenyl-3-methylthiazole.
- Butyltoluene, $\alpha\beta$ -dibromo-, and its derivatives (KUNCKELL), 1912, A., i, 482.
- m*-*iso*Butyltoluene (NIEMCZYKI), 1905, A., i, 579.
- tert*.-Butyltoluene, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILINFABRIKATION), 1907, A., i, 907.
- o*- and *p*-Butyltoluenes, action of light on the bromination and chlorination of (SALIBILL), 1911, A., i, 276.
- tert*.-Butyltoluenes, *o*- and *p*-, and their derivatives (KOZAK), 1907, A., i, 403.
- cyclo*Butyltrimethylammonium hydroxide and iodide (WILLSTÄTTER and V. SCHMAEDEL), 1905, A., i, 514.
- Butylurethane and its nitroso-derivative (NIRDLINGER, ACREE, and HEAPS), 1910, A., i, 342.
- α -*iso*Butylvaleric acid and its salts (FISCHER, HOLZAPFEL, and V. GWINNER), 1912, A., i, 158.
- iso*Butyl vinyl ketone (BLAISE and MAIRE), 1906, A., i, 142.
- tert*.-Butylxylene, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILINFABRIKATION), 1907, A., i, 907.
- 5-*tert*.-Butyl-*m*-xylen-2-ol (DARZENS and ROST), 1911, A., i, 290.
- Butyraldehyde, γ -amino-, and its *N*-formyl derivative and their diethylacetals (WOHL, SCHÄFER, and THIELE), 1906, A., i, 105.
- n*-Butyramide, *dl*- α -amino (KOENIGS and MYLO), 1909, A., i, 87.
- $\beta\gamma$ -dibromo- (LESPIEAU), 1904, A., i, 471.
- iso*Butyramide, α -amino- (FRANCHIMONT and FRIEDMANN), 1908, A., i, 509.
- α -aminothio-, acetyl derivative (HELLSING), 1904, A., i, 563.
- bromo- (MAUGUIN), 1911, A., i, 357.
- iso*Butyranilide, imide chloride of (STAUDINGER), 1908, A., i, 654.
- Butyric acid, formation of, from alcohol, by the silent electric discharge (LÖB), 1909, A., i, 759.
- formation of, from glutamic acid (BRASCH and NEUBERG), 1908, A., i, 860.
- from the fusion of isopilocarpine with potassium hydroxide (JOWETT), 1904, P., 14.
- solidification of mixtures of water and (FAUCON), 1909, A., i, 356.
- oxidation of, by hydrogen peroxide (DAKIN), 1908, A., i, 74.
- Perbutyric acid (D'ANS and FREY), 1912, A., i, 602.
- Butyric acid, ammonium salt (FALCIOLA), 1911, A., i, 175.
- sodium salt, compound of, with acetic anhydride (TSAKALOTOS), 1910, A., i, 458.
- uranyl potassium salt (RIMBACH, BÜRGER, and GREWE), 1904, A., ii, 265.
- cyanomethyl ester (HENRY), 1904, A., i, 982.
- ethyl ester, action of glycine on (LIEBOWITZ), 1912, A., i, 746.
- hydrolysis of, by lipase (KASTLE, JOHNSTON, and ELVOVE), 1904, A., i, 702.
- effect of ions on the hydrolysis of, by pancreatic extract (NEILSON and BROWN), 1904, A., ii, 229.
- α -methylhexylcarbiny ester (HILDITCH), 1911, T., 222.
- phenolphthalein ester (KNOLL & Co.), 1909, A., i, 932.
- Butyric acid, α -amino- (ABDERHALDEN), 1911, A., i, 955.
- synthesis of (ZELINSKY and STADNIKOFF), 1908, A., i, 607.
- derivatives of (FISCHER and RASKE), 1905, A., i, 693; (HILDESHEIMER), 1910, A., i, 891.

Butyric acid, α -amino-, α -bromobutyl derivatives, isomeric (FISCHER and RASKE), 1905, A., i, 693.

esters, hydrochloride (CURTIUS and MÜLLER), 1904, A., i, 482.

β -amino-, relationship of the optically active forms of, and their derivatives (SCHEIBLER), 1912, A., i, 682.

derivatives of (KAY), 1908, A., i, 778.

compounds of, with hippurylazo-imide (CURTIUS and GUMLICH), 1904, A., i, 886.

γ -amino-, formation of (ABDERHALDEN and KAUTZSCH), 1912, A., i, 952.

salts of (ENGELAND and KUTSCHER), 1910, A., ii, 1090.

derivatives of (GABRIEL and COLMAN), 1908, A., i, 274.

compounds of, with hippurylazo-imide (CURTIUS and MÜLLER), 1904, A., i, 887.

$\alpha\beta$ -diamino-, synthesis of, and its compound with phenylcarbimide, and picrate, and β -amino- α -hydroxy- (NEUBERG and FEDERER), 1906, A., i, 805.

α -amino- β -hydroxy-, and its salts and α -nitro- β -hydroxy-, and its acetyl derivative (EGOROFF), 1903, A., i, 790.

α -amino- γ -hydroxy-, synthesis of, and its salts and *N*-benzoyl derivative and their lactones (FISCHER and BLUMENTHAL), 1907, A., i, 191.

synthesis of, and its dibenzoyl derivative (SÖRENSEN and ANDERSEN), 1908, A., i, 650.

β -amino- α -hydroxy-, and its additive salts (EGOROFF), 1903, A., i, 790.

γ -amino- α -hydroxy-, and its hydrochloride and platinichloride (FISCHER and GÖDDERTZ), 1911, A., i, 20.

α -bromo-, interaction of, and its sodium salt, with water and with alkali (SEETER), 1909, T., 1827; P., 236.

interaction of, and its sodium salt, with silver salts in aqueous solution (SEETER), 1910, T., 346; P., 23.

carvacryl and thymyl esters (BISCHOFF, BLUMENTHAL, and KOWERSKI), 1907, A., i, 34.

ethyl ester, condensation of, with cyclohexanones (WALLACH, CHURCHILL, and RENTSCHLER), 1908, A., i, 404.

Butyric acid, α -bromo-, guaiacyl and α - and β -naphthyl esters (BISCHOFF, GUSSEW, WIELOWIEYSKI, and WILLUMS), 1907, A., i, 34.

and α -iodo-, guaiacyl esters of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 630.

***o*-, *m*-, and *p*-nitrophenyl esters** (BISCHOFF, AMBARDANOFF, and SCHMÄHLING), 1907, A., i, 36.

phenyl and *o*-, *m*-, and *p*-tolyl esters (BISCHOFF, BIHMANN, GUSSEW, SMOLNIKOFF, and WACHSMUTH), 1907, A., i, 33.

***p*-tolyl ester** (AUWERS), 1912, A., i, 107.

β -bromo-, and its amide and ethyl ester (LESPIEAU), 1905, A., i, 9.

$\alpha\beta$ -dibromo-, and its ethyl, methyl, and allyl esters, action of bases on (JAMES), 1910, T., 1565; P., 201.

$\alpha\gamma$ -dibromo-, ethyl ester (KIJNER), 1909, A., i, 694.

$\beta\gamma$ -dibromo-, and *-dichloro-* (LESPIEAU), 1904, A., i, 471.

$\beta\gamma$ -dibromo- and γ -chloro- β -bromo- (LESPIEAU), 1903, A., i, 547.

$\beta\beta\gamma$ - and $\beta\gamma\gamma$ -tribromo- α -hydroxy- (LESPIEAU), 1912, A., i, 7.

γ -chloro- α -hydroxy- and $\alpha\gamma$ -dihydroxy-, and their salts (RASKE), 1912, A., i, 335.

α -cyano-, salts and derivatives (HADLEY), 1912, A., i, 699.

β -cyano- β -hydroxy-, ethyl ester (BUCHERER), 1903, A., i, 612; (BUCHERER and GROLÉE), 1906, A., i, 405.

α -hydroxy-, nitrate of (DUVAL), 1904, A., i, 137.

β -hydroxy-, new mode of formation of, in the animal organism (DAKIN), 1910, A., ii, 632.

decomposition of, by enzymes of the liver (WAKEMAN and DAKIN), 1909, A., ii, 908.

zinc calcium salt of (SHAFFER), 1912, A., i, 236.

utilisation of, in the liver (PŘIBRAM), 1912, A., ii, 661.

methyl ester, *l*- β -hydroxy-, methyl ester, and *d*- β -chloro-, and its methyl ester (FISCHER and SCHEIBLER), 1909, A., i, 359.

detection and estimation of, in urine (SHAFFER; BLACK), 1908, A., ii, 992.

estimation of, in urine (DARMSTAEDTER), 1903, A., ii, 394; (RYFFEL), 1905, A., ii, 559; (COOKE and GORSLIN), 1911, A., ii, 1140.

Butyric acid, *l*- β -hydroxy-, estimation of, in urine and in blood (PRIBRAM), 1912, A., ii, 700.

α - and β -hydroxy-, methylene compounds of (DE BRUYN and ALBERDA VAN EKENSTEIN), 1903, A., i, 149.

$\alpha\beta$ -dihydroxy-, resolution of, into its optically active constituents (MORRELL and HANSON), 1904, T., 197; P., 20.

$\beta\gamma$ -dihydroxy-, lactone of, and its benzoyl derivative (CARRE), 1908, A., i, 501.

$\alpha\beta\gamma$ -trihydroxy- (*r*-erythric acid), and its phenylhydrazide (NEF), 1908, A., i, 7.

synthesis of, and its hydrazide and brucine salt (LESPIEAU), 1908, A., i, 4.

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α -hydroxylamino- (POSNER), 1904, A., i, 161.

β -imino- α -cyano-, ethyl ester (BARON, REMFRI, and THORPE), 1904, T., 1739.

α -nitro-, ethyl ester, and its ammonium and sodium derivatives (ULPIANI), 1905, A., i, 9.

α -nitroso-, ethyl ester (SCHMIDT and WIDMANN), 1909, A., i, 454.

dioximino-, ethyl ester, non-existence of two stereoisomerides of, and its acetyl derivatives (BOUVEAULT and WAHL), 1905, A., i, 257, 612; (HANTZSCH), 1905, A., i, 408.

α -oximino- β -nitrosoamino-, ethyl ester (H. and A. v. EULER), 1904, A., i, 146, 230.

dithio- (*propylcarbothionic acid*) (Houben and POHL), 1907, A., i, 475.

d-Butyric acid, α -amino- (KOELKER), 1911, A., i, 773.

dl-Butyric acid, α -amino-, chloroacetyl derivative (ABDERHALDEN, CHANG, and WURM), 1911, A., i, 526.

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β -amino-, and its methyl ester, and *d*-, and *l*- β -amino- (FISCHER and SCHEIBLER), 1911, A., i, 527.

l-Butyric acid, β -hydroxy-, formation of, in the animal body (DAKIN), 1910, A., ii, 976; (FRIEDMANN and MAASE), 1910, A., ii, 977.

isoButyric acid and valeric acid, estimation of, by Duclaux's method (LASERRE), 1907, A., ii, 203.

isoButyric acid, α -amino-, and its amide, hydrochloride of (v. GULEWITSCH and WASMUS), 1906, A., i, 410.

acetyl derivative, and its salts, ethyl ester, and nitrile (HELLSING), 1904, A., i, 563.

N-benzoyl derivative, and its amide and lactimone (MOHR and GEIS), 1908, A., i, 339.

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β -amino- α -hydroxy-, and β -chloro- α -hydroxy-, and their derivatives (FOURNEAU), 1909, A., i, 211.

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ethyl ester, and its hydrochloride and urethane (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1908, A., i, 938.

α -bromo-, action of bromine and alkali hydroxide on (KIJNER), 1905, A., i, 332.

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ethyl ester, condensation of, with cyclohexanones (WALLACH, CHURCHILL, and MALLISON), 1908, A., i, 406.

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and aldehydes, action of magnesium on a mixture of (ZELTNER and REFORMATSKY), 1907, A., i, 23.

carvacryl and thymyl esters (BISCHOFF, BLUMENTHAL, and KOWERSKI), 1907, A., i, 34.

α -bromoisobutyl ester (TISCHTSCHENKO and WISCHNIAKOFF), 1907, A., i, 284.

guaiacyl and α - and β -naphthyl esters (BISCHOFF, GUSSEW, WIELOWIEYSKI, and WILLUMS), 1907, A., i, 34.

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- iso*Camphenilanic acid, bromo-, and its derivatives (HENDERSON and HEILBRON), 1911, T., 1894; P., 249.
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- Camphenilideneacetone and its semicarbazone and *p*-bromophenylhydrazine (CHEMISCHE FABRIK AUF AKTIEN FORM. E. SCHERING), 1903, A., i, 504.
- Camphenilol (KOMPPA), 1909, A., i, 500. and its benzoate (HINTIKKA and KOMPPA), 1912, A., i, 279.
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- i*- α -Campholactone, synthesis of (PERKIN and THORPE), 1904, T., 128.
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- iso*Campholactone, amino-, hydroxyl-amino-, and nitro-, and their salts and derivatives (NOYES and HOMBERGER), 1911, A., i, 110.
- β -Campholan- $\alpha\beta$ -diol and Campholan oxide (BÉHAL), 1904, A., i, 330.
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- α -Campholenic acid, derivatives of (BLANC and DESFONTAINES), 1904, A., i, 366.
- β -Campholenol and its acetate, butyrate, and formate (BÉHAL), 1904, A., i, 329.
- β -Campholenolactone, synthesis of (BLANC) 1908, A., i, 20, 171.
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- l*-Campholic acid and its ethyl ester and sodium and copper salts, anhydride, chloride, and amide (GUERBET), 1909, A., i, 100.

- l*-Campholic acid and its methyl and ethyl esters, and amide, anhydride, and chloride (GUERBET), 1909, A., i, 301.
- r*-Campholic acid and its amide, anhydride, and sodium salt (GUERBET), 1909, A., i, 310.
- r*-Campholic acid, bromo-, and cyano- (KOMPPA), 1909, A., i, 110.
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- Campholide, formation of (BLANC), 1905, A., i, 683.
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- α -Campholyl alcohol and its pyruvate and semicarbazone (BLANC), 1906, A., i, 174.
- i*- α -Campholytic acid (PERKIN), 1903, T., 853.
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- cis*-Camphonolactone (BREDT, LUND, and AMANN), 1912, A., i, 113.
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- Camphonolic acids, stereoisomeric (BREDT, LUND, and AMANN), 1912, A., i, 112.
- i*-Camphononic acid and amide (NOYES and WARREN), 1903, A., i, 147.
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- Camphoryl-*p*-methoxyphenyltriazen** (FORSTER and GARLAND), 1909, T., 2064.
- Camphorylmethyl- ψ -carbamide**, *N*-bromo- and *N*-chloro- (FORSTER and GROSSMANN), 1906, T., 402; P., 74.
- Camphorylmethyl- β -disulphoxide** (HILDITCH), 1910, T., 1098; P., 96.
- Camphorylmethylpropylcarbinol** (MALMGREN), 1903, A., i, 711.
- Camphoryl-*o*-, -*m*-, and -*p*-nitrophenylmethyltriazens** (FORSTER and GARLAND), 1909, T., 2067.
- Camphoryl-*o*-, -*m*-, and -*p*-nitrophenyltriazens** (FORSTER and GARLAND), 1909, T., 2062.
- Camphoryloxime** (*camphonitrophenol*), preparation of (PONZIO), 1903, A., i, 44.
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- Camphorylphenylhydrazide**, *N*-nitro- and *N*-nitroso-, and their bromo-derivatives (WOOTTON), 1907, T., 1892; P., 250.
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- Camphyl disulphide** and its derivatives (BORSCH and LANGE), 1906, A., i, 679.
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- Camphylamine benzenesulphonate** (v. BRAUN), 1908, A., i, 677.
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- 1-Camphyl-2:5-dimethylpyrrole** and its 3:4-dicarboxylic acid and its ethyl ester and salts (BÜLOW), 1905, A., i, 231.
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- cis*-Camphylglycol (BREDT and SANDKUHL), 1909, A., i, 500.
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- Camphylmethylsulphone (BORSCHÉ and LANGE), 1906, A., i, 679.
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- Camphylpiperidine and its picate (v. BRAUN), 1908, A., i, 677.
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- and other tumours, peptolytic enzymes in (ABDERHALDEN and MEDIGRECEANU; ABDERHALDEN and PINCUSOHN), 1910, A., ii, 636.
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- Cancer, hydrochloric acid in (PALMER), 1906, A., ii, 786; (COPEMAN and HAKE), 1906, A., ii, 875.
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- detection of (FENTON and WILKS), 1911, A., i, 269.
- Carbamides**, hydroxy-, and carbamidoximes (CONDUCHÉ), 1908, A., i, 12, 154.
- thio-. See Thiocarbamides.
- iso***Carbamides** (STIEGLITZ and NOBLE), 1905, A., i, 639.
- as*-. **Carbamidedicarboxylic acid**, ethyl and methyl esters (DIELS and GOLLMANN), 1911, A., i, 956.
- Carbamidoacetic acid**. See Hydantoic acid.
- Carbamidoacetothioamide** (JOHNSON and BURNHAM), 1912, A., i, 305.
- 1-Carbamido-4-acetyl-5-methyltriazole**, semicarbazone of (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 207.
- Carbamido-acids** and their salts (LIP-PICH), 1908, A., i, 861.
- formation of (WEILAND), 1912, A., ii, 278.
- formation of, in the organism (LIP-PICH), 1910, A., ii, 977.
- p*-. **Carbamidobenzeneazofornamide** (BORSCHÉ and RECLAIRE), 1907, A., i, 988.
- p*-. **Carbamidobenzenesulphonic acid**, salts of (STODDARD), 1912, A., i, 111; (CHAMBERLAIN), 1912, A., i, 355.
- β*-. **Carbamido-α-benzoylamino-β-phenylpropionic acid** (POSNER and STIRNUS), 1912, A., i, 457.
- Carbamidobis-4:5:6-trimethyl-2-pyrimidone** (DE HAAN), 1908, A., i, 578.
- 1-Carbamidocarbamil-3:5-dimethylpyrazole** and **-3-methylpyrazolone**, amino- (PELLIZZARI and RONCAGLIOLO), 1907, A., i, 834.
- Carbamidocinnamyl-**. See Carbamido-styryl-.
- Carbamidocrotonic acid**, *β*-thio-, ethyl ester (BRIGL), 1912, A., i, 533.
- Carbamidodextrose** (MAYER), 1909, A., ii, 508.
- Carbamidodiacetonitrile** and its isomeride (V. MEYER and LEHMANN), 1908, A., i, 910.
- Carbamidodi-ethyl- and -propyl-malonic acids** (GEBRÜDER VON NIESSEN), 1903, A., i, 799; (FISCHER and DILTHEY), 1905, A., i, 37; (CONRAD and ZART), 1905, A., i, 754.
- 6-Carbamido-4:6-dimethyl-2-pyrimidone** (DE HAAN), 1908, A., i, 578.
- 1-Carbamido-2:5-dimethylpyrrole-3:4-dicarboxylic acid** and its ethyl ester (BÜLOW, RIESS, and LAUTERMEISTER), 1905, A., i, 661.
- α*-. **Carbamido-α-β-diphenylcarbamide** (BAILEY, ACREE, and MILLER), 1904, A., i, 827.
- β*-. **Carbamido-α-β-diphenyl-Δ^γ-pentenoic acid** (POSNER and ROHDE), 1910, A., i, 848.
- β*-. **Carbamido-α-β-diphenylpropionic acid** (POSNER and STIRNUS), 1912, A., i, 457.
- β*-. **Carbamido-β-furylpropionic acid** (POSNER and STIRNUS), 1912, A., i, 457.
- Carbamidoglycuronic acid** and its barium salt (NEUBERG and NEIMANN), 1905, A., i, 411.
- Carbamidoguanazole** and its hydrobromide (PELLIZZARI and REPETTO), 1908, A., i, 65.
- dl*- and *d*-. **2-Carbamidohydrindamine**, 1-hydroxy- (POPE and READ), 1912, T., 763.
- β*-. **Carbamido-α-hydropiperic acid** (POSNER and ROHDE), 1910, A., i, 848.
- 2-Carbamido-6-hydroxy-4:5-dimethylpyrimidine** (POHL), 1908, A., i, 577.
- 2-Carbamido-6-hydroxy-4-methyl-5-ethylpyrimidine** (POHL), 1908, A., i, 577.
- 2-Carbamido-6-hydroxy-4- and -5-methylpyrimidines** (POHL), 1908, A., i, 577.
- 2-Carbamido-6-hydroxy-4-phenylpyrimidine** (POHL), 1908, A., i, 577.
- Carbamidoketo-**. See Ketocarbamido-.
- Carbamidomalonamide** (WOOD and ANDERSON), 1909, T., 982; P., 154.
- Carbamidomalonic acid** and its salts (PILOTY and FINCKH), 1904, A., i, 825.
- Carbamidomalonylurea**. See *ψ*-. **Uric acid**.
- 3-Carbamido-2-methylidihydro-4-quinazalone**, 5-nitro-, and its diacetyl derivative (BOGERT and SEIL), 1906, A., i, 713.
- Carbamidomethylenemalonic acid**, ethyl ester (WHEELER, JOHNSON, and JOHNS), 1907, A., i, 559.

- 4-Carbamidomethylglyoxalone** (FRANCHIMONT and DUBSKY), 1911, A., i, 239.
- 1-Carbamido-3-methylpyrazole-4-azo-benzene-4'-p-azosalicylic acid**, 5-hydroxy- (BÜLOW and HAAS), 1911, A., i, 340.
- Carbamido-5-methyl-2-thiohydantoin**, and its 3-allyl and 3-ethyl derivatives (BAILEY, ACREE, and MILLER), 1904, A., i, 826.
- 1-Carbamido-5-methyltriazole-4-carboxylic acid** and its ethyl ester and silver salt (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 206.
- β -Carbamido- β -phenylisobutyric acid** (POSNER and STIRNUS), 1912, A., i, 456.
- Carbamidophenyldiazoaminobenzene, m-nitro-** (BAILEY and KNOX), 1907, A., i, 802.
- Carbamidophenyldiazoaminoisobutyric acid, m-nitro-**, ethyl ester (BAILEY and KNOX), 1907, A., i, 801.
- Carbamidophenyldiazoaminopropionic acid**, ethyl ester, and its *m*-nitro-derivative (BAILEY and KNOX), 1907, A., i, 801.
- 1-Carbamido-3-phenyl-5-methylhydantoin** (BAILEY, ACREE, and MILLER), 1904, A., i, 827.
- 1-Carbamido-3-phenyl-5-mono- and -dimethyl-2-thiohydantoins** (BAILEY, ACREE, and MILLER), 1904, A., i, 826.
- β -Carbamido- β -phenylpropionic acid** (POSNER), 1905, A., i, 578.
- p*-Carbamidophenylsemicarbazide** (BORSCHÉ and RECLAIRE), 1907, A., i, 988.
- 1-Carbamido-5-phenyltriazole-4-carboxylic acid** and its ethyl ester (WOLFF and HALL), 1904, A., i, 120.
- β -Carbamidopiperonylpropionic acid** (POSNER), 1912, A., i, 456.
- 1-Carbamido-5-piperonyl-4:5-pyrazoline** and its salts (SCHOLTZ and KIPKE), 1904, A., i, 508.
- Carbamidopropionic acid**, potassium salt (ANDREASCH), 1903, A., i, 157.
- 1-Carbamido-2-pyridone-5-carboxylic acid**, 3-bromo-, and its methyl ester (BÜLOW and FILCHNER), 1908, A., i, 1017.
- Carbamidopyrimidines**, formation of purines from (JOHNSON and MCCOLLUM), 1906, A., i, 769.
- β -Carbamido- β -styrylpropionic acid** (POSNER and ROHDE), 1909, A., i, 649.
- Carbamidotartronic acid**, ethyl ester (CURTISS and STRACHAM), 1911, A., i, 354.
- α -Carbamido- β -p-tolylpropionic acid** (DAKIN), 1911, A., ii, 416.
- β -Carbamido- β -p-tolylpropionic acid** (POSNER and OPPERMAN), 1907, A., i, 56.
- 1-Carbamido-2:3:5-trimethylpyrrole-4-carboxylic acid**, ethyl ester (KORSCHUN and ROLL), 1911, A., i, 502.
- Carbamidoximes** (v. BRAUN and SCHWARZ), 1904, A., i, 38.
- and hydroxycarbamides (CONDUCHÉ), 1908, A., i, 12, 154.
- molecular refractions of some (CONDUCHÉ), 1908, A., i, 156.
- Carbaminiethioglycollarylamides*** (FRIEDRICH and WILDT), 1908, A., i, 414.
- Carbaminethioglycollhydrazides**. See Carbamylthiolacetohydrazides.
- Carbaminoacetic acid, dithio-**, benzyl hydrogen ester and its barium salt (SIEGFRIED and WEIDENHAUPT), 1911, A., i, 116.
- ethyl ester and its mercury salts (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1911, A., i, 841.
- Carbamino-reaction**, application of the (LIEBERMANN), 1909, A., ii, 103.
- method for estimating the ratio CO_2/N in the (SIEGFRIED), 1907, A., ii, 825.
- physiological importance of the (SULZE), 1911, A., ii, 128.
- Carbamylazoisobutyric acid**, chemical behaviour of derivatives of, and its esters (BAILEY and KNOX), 1907, A., i, 801.
- o*-Carbamylbenzeneazobenzoic acid** (benzamide-*o*-azobenzoic acid) (HELLER and WEIDNER), 1910, A., i, 596.
- o*-Carbamylbenzenesulphonic acid**. See *o*-Sulphobenzamide.
- 3-Carbamylbenzotetronic acid**. See Coumarin-3-carboxylamide, 4-hydroxy-.
- Carbamylcamphoformeneaminocarboxylic acid** (TINGLE and HOFFMANN), 1905, A., i, 800.
- and its ethyl ester (TINGLE and ROBINSON), 1906, A., i, 902.
- 5-Carbamyl-4:4-dimethyl-2-piperidone**, 6-imino-3-cyano- and its platinichloride (THOLE and THORPE), 1911, T., 430.
- 1-Carbamyl-3:5-dimethylpyrazole**, 4-nitroso- (SACHS and ALSLEBEN), 1907, A., i, 357.
- Carbamyl-*p*-ethoxyphenylhydrazide** (BORSCHÉ and ZELLER), 1904, A., i, 1057.

- 1-Carbamyl-3-ethyl-, -methyl- and -propyl-pyrazolines (MAIRE), 1908, A., i, 290.
- Carbamylglycollic acid, thio-, salts and anhydride of (HOLMBERG), 1909, A., i, 286.
- dithio-, and its anhydride (HOLMBERG), 1906, A., i, 811.
- Carbamylglycylglycineamides, α - and β - (FISCHER), 1903, A., i, 466.
- α' -Carbamylcyclohexane-1:1-diacetic acid, α -cyano-, ω -imide and ω -imino-imide of, and their derivatives (THOLE and THORPE), 1911, T., 443.
- Carbamyl-2-methylbenziminazole (BOGERT and WISE), 1912, A., i, 451.
- 5-Carbamyl-4-methyl-4-ethyl-2-piperidone, 6-imino-3-cyano- (THOLE and THORPE), 1911, T., 437.
- 3-Carbamylmethyl-5-pyrrolidone-3-carboxylic acid, 2-imino-, ethyl ether (THOLE and THORPE), 1911, T., 1688.
- o*-Carbamylphenylacetic acid (WEGSCHEIDER and GLOGAU), 1904, A., i, 250.
- β -Carbamylphenylmethylaminocrotonic acid, ethyl ester (CLARKE and FRANCIS), 1911, T., 322.
- p*-Carbamylphenylurethane (BOGERT and WISE), 1912, A., i, 450.
- α -*r*-3-Carbamyl-4-piperidylacetic acid and its hydrochloride (WOHL and LOSANITSCH), 1908, A., i, 48.
- Carbamylpyrazole and its dioxime and semicarbazone, and its isomeride (BLAISE and MAIRE), 1908, A., i, 391.
- α -Carbamyl- β -styryl- β -methylacrylic acid (HAWORTH), 1909, T., 485.
- m*-Carbamylsuccinanic acid (BOGERT and BEANS), 1904, A., i, 585.
- α -Carbamyltetrone acid (BENARY), 1910, A., i, 581.
- Carbamylthioglycollic acid, thio-, and its salts (HOLMBERG), 1909, A., i, 286.
- Carbamylthiolacetohydrazides (*carbamylthioglycolthydrazides*) (FRERICHS and FÖRSTER), 1910, A., i, 191.
- Carbamylthiolanthraquinone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 197.
- Carbanil. See Phenylcarbimide.
- Carbanilic acid, 2:4-dibromo-, ethyl ester (FROMM and HEYDER), 1909, A., i, 911.
- Carbanilide. See *s*-Diphenylcarbamide. thio-. See Thiocarbanilide.
- C*-Carbanilides, formation of (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 135.
- Carbanilido- β -aldoximes and their reactions (BECK and HASE), 1907, A., i, 826.
- Carbanilidobenzene-azo- and hydrazo-*p*-cresols and their chloro-derivatives (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.
- Carbanilido-*l*-benzoin (WREN), 1909, T., 1586.
- Carbanilido- β -carbanilidophenylhydrazine, α -thio- (BUSCH and LIMPACH), 1911, A., i, 690.
- Carbanilido- β -carbanilido-*o*- and -*p*-tolyl hydrazine, α -thio- (BUSCH and LIMPACH), 1911, A., i, 690.
- Carbanilido-*p*-hydroxyazobenzene (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 389.
- Carbanilido-5-hydroxy-2-methylbenzidine (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.
- Carbanilido-*p*-toluene-azo- and -hydrazo-*p*-cresols (GOLDSCHMIDT and LÖW-BEER), 1905, A., i, 390.
- Carbanilino-3-amino-*p*-cresol, *N*- and *O*- (AUWERS and EISENLOHR), 1909, A., i, 223.
- Carbanilino-dibenzylhydroxylamine and -piperidine oxide and their *p*-nitrophenylhydrazones (HAASE and WOLFENSTEIN), 1904, A., i, 856.
- Carbanilinodiphenylmethylenediamine, dithio- (SENIER and SHEPHEARD), 1909, T., 498.
- 1-Carbanilino-1:4-diphenylsemithiocarbazide and its hydrochloride (BUSCH and FREY), 1903, A., i, 537.
- Carbanilinodi-*p*-tolylmethylenediamine, dithio- (SENIER and SHEPHEARD), 1909, T., 502.
- 5-Carbanilino-2-methylcyclopentan-1-one, 2-cyano- (BEST and THORPE), 1909, T., 703.
- 5-Carbanilinocyclopentan-1-one, 2-cyano- (BEST and THORPE), 1909, T., 701.
- C*-Carbanilino-2-acetic- δ -lactone and its salts (DIECKMANN and BREEST), 1904, A., i, 846.
- Carbanilphenylbenzenylhydrazidine (VOSWINCKEL), 1903, A., i, 777.
- Carbapatite. See Podolite.
- Carbazines, thio-. See Thiocarbazines.
- Carbazinic acid, dithio-, aromatic esters of (BUSCH and KRAFF), 1911, A., i, 812.
- 2-Carbazino-4-quinazalone, 3-amino-, and its hydrochloride and diacetyl derivative (BOGERT and GORTNER), 1910, A., i, 285.
- Carbazole, new synthesis of, and the numbering of the positions in (BORSCHKE, WITTE, and BOTHE), 1908, A., i, 365.

- Carbazole**, action of finely divided metals on (PADDA and CHIAVES), 1908, A., i, 104.
- compound of, with magnesium ethyl iodide (ODDO), 1911, A., i, 488.
- compound of trinitrobenzene and (SUDBOROUGH and BEARD), 1910, T., 796.
- additive compounds of, with trinitro-toluene and picryl chloride (CIUSA and VECCHIOTTI), 1912, A., i, 755.
- perchlorate (HOFMANN, METZLER, and LECHER), 1910, A., i, 187.
- and amino- and nitro-, sulphonic acids of, and their derivatives (SCHULTZ and HAUSENSTEIN), 1907, A., i, 1074.
- and 2- and 3-chloro- (ULLMANN, DELETRA, and KOGAN), 1904, A., i, 776.
- Carbazole**, 1-amino-, and its salts, di-amino-, and its dibenzoate, dichloro-diamino-, and -dinitro- (ZIERSCH), 1909, A., i, 961.
- 3-amino-, and its acetyl derivative (DELETRA and ULLMANN), 1904, A., i, 271.
- tetraamino- and tetranitro- (ESCALES and WOLGAST), 1904, A., i, 1063; (ZIERSCH), 1909, A., i, 961.
- Carbazoles** (DELETRA and ULLMANN), 1904, A., i, 270; (ULLMANN, DELETRA, and KOGAN), 1904, A., i, 776.
- new (BORSCHKE and FEISE), 1907, A., i, 242.
- formation of (JAPP and MAITLAND), 1903, T., 267; P., 19.
- Carbazole series**, studies in the (SCHWALBE and WOLFF), 1910, P., 339; 1911, T., 103.
- Carbazole-N-carbonyl-o-benzoic acid** and its methyl ester, silver salt, and amide (STÜMMER), 1907, A., i, 723.
- Carbazolecarboxylic acid** and its ethyl ester (BORSCHKE and FEISE), 1907, A., i, 242.
- and its ethyl ester and their condensation products with *p*-nitrosophenol (CASSELLA & Co.), 1912, A., i, 512.
- Carbazole-9-carboxylic acid**, ethyl ester (*diphenyleneurethane*) (ODDO), 1911, A., i, 489.
- Carbazole-3:6-diphthaloylic acid** (SCHOLL and NEOVIUS), 1911, A., i, 567.
- Carbazoledisulphonic acid**, potassium salt and derivatives of, and 3-amino-, potassium salt, and 3-nitro-, barium salt (SCHWALBE and WOLFF), 1911, T., 105.
- Carbazoledisulphonic acid**, dihydroxy-, and its potassium and barium salts (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 774.
- Carbazolesulphonic acid**, dinitro- (WIRTH and SCHOTT), 1903, A., i, 54.
- Carbazoletetrasulphonic acid**, and its potassium salt (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 774.
- Carbazoline**, formation of (CARRASCO), 1908, A., i, 913.
- Carbazyl methyl ketone** and its oxime and semicarbazone (BORSCHKE and FEISE), 1907, A., i, 242.
- γ -Carbethoxy- γ -acetyl- β -alkyl- and - β -phenyl-butyronitriles and -butyronitrile- α -amides (GUARESCHI), 1906, A., i, 800.
- Carbethoxy-alanine** and its ethyl ester, amide, and chloride, and -alanylglycine and its ethyl ester and amide (FISCHER and AXHAUSEN), 1905, A., i, 689.
- Carbethoxyalanylglycylglycine** (FISCHER), 1903, A., i, 799.
- Carbethoxyaminoacetone** (JOHNSON and MCCOLLUM), 1906, A., i, 157.
- ω -Carbethoxyaminoacetophenone (MANNICH and HAHN), 1911, A., i, 648.
- Carbethoxyaminoacetothioamide** (JOHNSON and BURNHAM), 1912, A., i, 305.
- Carbethoxy-dl- α -amino-n-butyramide** (KOENIGS and MYLO), 1909, A., i, 87.
- Carbethoxyaminocoumarans**, 1- and 2- (STOERMER and KÖNIG), 1906, A., i, 200.
- trans*- α -Carbethoxyamino- β - ψ -ethylthiocarbamideacrylic acid (JOHNSON), 1905, A., i, 835.
- 5-Carbethoxyamino-2-ethylthioldihydro-6-pyrimidone** (JOHNSON), 1905, A., i, 835.
- Carbethoxyamino-p-methoxyphenyl-acetonitrile** (JOHNSON and CHERNOFF), 1912, A., i, 810.
- 1-Carbethoxyamino-2-o-methoxyphenyl-5-methylcoumaran** (STOERMER and FRIEMEL), 1912, A., i, 46.
- ω -Carbethoxyaminomethylphenylcarbinol (MANNICH and HAHN), 1911, A., i, 649.
- 1-Carbethoxyamino-8-op-dinitroanilino-naphthalene** (SACHS and FORSTER), 1911, A., i, 734.
- α -Carbethoxyamino- α -phenylacetamide (CLARKE and FRANCIS), 1911, T., 322; P., 22.

- α -Carbethoxyamino- α -phenylacetic acid** (CLARKE and FRANCIS), 1911, T., 322.
- Carbethoxyaminophenylacetothioamide** (JOHNSON and CHERNOFF), 1912, A., i, 810.
- Carbethoxyaminotartronic acid**, ethyl ester and its disodium salt (CURTISS and STRACHAM), 1911, A., i, 353.
- Carbethoxy-*l*-asparagine** (KOENIGS and MYLO), 1909, A., i, 88.
- m*-Carbethoxybenzeneazo- β -naphthol** (GEBHARD and THOMPSON), 1909, T., 1121.
- Carbethoxybenzenediazohydroxylamino-*p*-toluene**, *o*-, *m*-, and *p*- (GEBHARD and THOMPSON), 1909, T., 773.
- o*-Carbethoxybenzenediazohydroxylamino-*p*-toluene**, bromo- (GEBHARD and THOMPSON), 1909, T., 1121.
- 3-Carbethoxybenzotetranilide**. See 4-Anilinocoumarin-3-carboxylic acid, ethyl ester.
- 3-Carbethoxybenzotetronic acid**. See Coumarin-3-carboxylic acid, 4-hydroxy-, ethyl ester.
- Carbethoxy- α -benzylglutaconic acid**, ethyl esters (BLAND and THORPE), 1912, T., 885.
- γ -Carbethoxy- α -benzylglutaconic acid**, ethyl ester (THOLE and THORPE), 1911, T., 2200.
- 1-Carbethoxy- β -cyclobutyl-1-propionic acid**, β -imino- α -cyano-, ethyl ester (CAMPBELL and THORPE), 1910, T., 2422.
- Carbethoxycarbimide** and its reactions (DIELS and JACOBY), 1908, A., i, 613.
- p*-Carbethoxydibenzoylmethane** (SMEDLEY), 1910, T., 1491.
- Carbethoxydi-ethyl- and -propylbarbituric acids** (TRAUBE), 1907, A., i, 557.
- Carbethoxydiglycinimide** (BERGELL and FEIGL), 1908, A., i, 140.
- Carbethoxydiglycylglycine**, ethyl esters, isomerism of (LEUCHS and LA FORGE), 1908, A., i, 723.
- β -Carbethoxy- α -dimethylcrotonic acid**, γ -cyano-, ethyl ester, formation of (ROGERSON and THORPE), 1906, T., 649.
- Carbethoxy- $\alpha\beta$ -dimethylglutaconic acid**, ethyl ester (BLAND and THORPE), 1912, T., 1563.
- Carbethoxy- $\alpha\gamma$ -dimethylglutaconic acid**, esters of (THOLE and THORPE), 1911, T., 2202.
- 3-Carbethoxy-1:1-dimethylcyclopentan-2-one-3-acetic acid** (BLANC), 1908, A., i, 171.
- 3-Carbethoxy-2:4-dimethylpyrrole-5-acetic acid** (FISCHER and BARTHOLOMÄUS), 1912, A., i, 648.
- 3-Carbethoxy-2:4-dimethylpyrrole-5-propionic acid** (FISCHER and BARTHOLOMÄUS), 1912, A., i, 648.
- Carbethoxy- α -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), 1911, T., 2199.
- ethyl esters (BLAND and THORPE), 1912, T., 884.
- γ -Carbethoxyglutaconic acid**, ethyl ester (THORPE), 1912, T., 254.
- Carbethoxyglutamic acid** and its salts (ABDERHALDEN and KAUTZSCH), 1910, A., i, 769.
- Carbethoxyglutazylacetic acid** and lactam of (BEST and THORPE), 1909, T., 1526.
- Carbethoxyglycine** and its derivatives (FISCHER and OTTO), 1903, A., i, 608.
- Carbethoxyglycine**, cyano-, methyl ester (DIELS and GUKASSIANZ), 1911, A., i, 24.
- Carbethoxyglycylalanine** and its derivatives (FISCHER and OTTO), 1903, A., i, 608.
- Carbethoxyglycylglycine**, isomeric esters of, and its *N*-phenyl derivatives (LEUCHS and MANASSE), 1907, A., i, 770.
- Carbethoxyglycyl-*dl*-leucine** and -tyrosine (FISCHER and BERGELL), 1903, A., i, 694.
- Carbethoxyglycyl-*N*-phenylglycine** (LEUCHS and LA FORGE), 1908, A., i, 724.
- Carbethoxyglycyl-*N*-phenylglycylglycine**, ethyl ester (LEUCHS and LA FORGE), 1908, A., i, 724.
- Carbethoxyglycyl-*N*-phenylglycyl-*N*-phenylglycine** and its ethyl ester (LEUCHS and LA FORGE), 1908, A., i, 724.
- Carbethoxyglycylsarcosine**, ethyl ester (LEUCHS and LA FORGE), 1908, A., i, 724.
- α -Carbethoxy- β -keto- γ -phenylbutyrolactam** (ANSCHÜTZ and BÖCKER), 1909, A., i, 730.
- Carbethoxyl isocyanate**. See Carbimide-carboxylic acid, ethyl ester.
- Carbethoxyl group**, cause of elimination of the, as ethyl carbonate (THOLE and THORPE), 1911, T., 2183; P., 252.
- Carbethoxy-*dl*-leucinamide** (KOENIGS and MYLO), 1909, A., i, 88.
- Carbethoxyleucylalanine** (FISCHER and WARBURG), 1905, A., i, 691.
- Carbethoxyleucylglycine** (FISCHER and BRUNNER), 1905, A., i, 690.

- Carbethoxy-*l*-leucyl-*l*-leucine** (FISCHER), 1906, A., i, 810.
- Carbethoxymandelonitrile** (FRANCIS and DAVIS), 1909, T., 1409.
- Carbethoxy- γ -methylaconitic acid**, ethyl ester, enol and keto forms (BLAND and THORPE), 1912, P., 131.
- N*-Carbethoxymethylanthranilic acid** (HOUBEN and FREUND), 1909, A., i, 795.
- 3-Carbethoxy-7-methylbenzotetronic acid**. See 7-Methylcoumarin-3-carboxylic acid, 4-hydroxy-, ethyl ester.
- Carbethoxy- γ -methyl- α -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), 1911, T., 2204.
- Carbethoxy- α -methyl- γ -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), 1911, T., 2205.
- Carbethoxy- α - β - and - β α -methylethyl-hydroxylamines** (JONES), 1907, A., i, 897.
- α -Carbethoxy- β -methylglutaconamide**, ethyl ester (ROGERSON and THORPE), 1905, T., 1692.
- Carbethoxy- α -methylglutaconic acid**, ethyl ester and its sodium salt (THOLE and THORPE), 1911, T., 2197. ethyl esters (BLAND and THORPE), 1912, T., 883.
- Carbethoxynaphthetetronic acid**. See Naphthapyronecarboxylic acid, hydroxy-, ethyl ester.
- Carbethoxyphenacylbarbituric acid**, and its sodium salt (KÜHLING), 1910, A., i, 780.
- Carbethoxyphenacyldialuric acid**, and its acetyl derivative (KÜHLING), 1910, A., i, 780.
- Carbethoxy-*dl*-phenylalaninamide** (KOENIGS and MYLO), 1909, A., i, 88.
- p*-Carbethoxyphenylarsinic acid**. See Benzarsinic acid, ethyl ester.
- m*-Carbethoxyphenylcarbamic acid**, *o*-carbomethoxyphenyl ester (EINHORN and v. BAGH), 1910, A., i, 259.
- γ -Carbethoxy- β -phenylglutaconic acid**, ethyl ester (BLAND and THORPE), 1912, T., 869.
- α -Carbethoxy-*N*-phenylglycylglycyl-glycine** and its esters (LEUCHS and LA FORGE), 1908, A., i, 723.
- Carbethoxyphenylhydroresorcinylacetic acid** and its isomeride (REINICKE), 1905, A., i, 787.
- o*-Carbethoxyphenylmethylcarbodi-imide** and its hydrochloride (FINGER), 1910, A., i, 383.
- β -Carbethoxyphenylpropionic acid**, 3:5-dinitro-2-amino-, and its ethyl ester (VAN DORP), 1905, A., i, 81.
- 3-Carbethoxy-5-phenyltetronic acid** and its metallic salts (ANSCHÜTZ and BÖCKER), 1909, A., i, 729.
- γ -Carbethoxy- α -isopropylglutaconic acid**, ethyl ester (THORPE), 1912, T., 255.
- Carbethoxypyridylacetic acid**, trihydroxy-, lactone of (BEST and THORPE), 1909, T., 1527.
- 5-Carbethoxypyrimidine-2-thioglycollic acid**, 6-amino- (JOHNSON and AMBLER), 1911, A., i, 576.
- α -Carbethoxysemicarbazino- α -isopropionitrile** (ACREE), 1907, A., i, 562.
- 4-Carbethoxytetrahydropyrrolidene-5-cyanoacetic acid**, 2-imino-, ethyl ester and its hydrochloride (BEST and THORPE), 1909, T., 1519.
- 4-Carbethoxytetrahydropyrrolidene-5- α -propionic acid**, 2-imino-4-cyano-, ethyl ester (CAMPBELL and THORPE), 1910, T., 1313.
- Carbethoxythiocarbimide** and the action of diphenylamine on (DIXON and TAYLOR), 1908, T., 697; P., 74.
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- Carbimidecarboxylic acid**, methyl ester (DIELS and GOLLMANN), 1911, A., i, 956.
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- α -Carbobenzoxo- β -phenylthiocarbamide** (DIXON), 1906, T., 904; P., 147.
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- 2-*o*-Carboxybenzoylindonoglyoxaline and its silver salt (RUHEMANN), 1910, T., 1442.
- α -Carboxy- β -benzoylpropionic acid (BOUGAULT), 1908, A., i, 422.
- 4-*o*-Carboxybenzyl-3:5-dimethyl-isooxazole and -pyrazole (BÜLOW and DESENISS), 1907, A., i, 253.
- 4-Carboxybenzyl-1:5-diphenyl-3-methylpyrazole, 1-*p*-nitro- (BÜLOW and KOCH), 1904, A., i, 322.
- 4-*o*-Carboxybenzyl-3-methyl-5-isooxazolone and -pyrazolone and 1-carboxylamide of the pyrazolone (BÜLOW and SIEBERT), 1905, A., i, 530.
- 4-*o*-Carboxybenzyl-5-phenyl-3-methylisooxazole (BÜLOW and KOCH), 1904, A., i, 322.
- 1-Carboxy- β -cyclobutyl-1-propionic acid, β -imino- α -cyano-, ethyl ester, α - and β -forms (CAMPBELL and THORPE), 1910, T., 2422.
- Carboxycamphoracetic acid, methyl ester (HALLER), 1905, A., i, 601.
- Carboxy- β -camphorpropionic acid methyl ester (HALLER), 1905, A., i, 602.
- m*- and *p*-Carboxycinnamic acid (SIMONIS, BOEHME, and BENENSON), 1912, A., i, 565.
- O*-Carboxy- $\beta\delta$ -dicyano- α -hydroxy- $\Delta\alpha$ -pentenoic acid, anil of (DIECKMANN), 1911, A., i, 457.
- O*-Carboxy- β -cyano- α -hydroxy- β -phenylpropenoic acid, anil of (DIECKMANN), 1911, A., i, 456.
- 1- α -Carboxy-*n*-decyl- Δ^4 -cyclopentene and 1- α -Carboxy-*n*-decyl-1:4-bicyclopentane. See Hydnocarpic acid.
- α -Carboxy-2-dibenzoyloxyacetic acid (CZAPLICKI, V. KOSTANECKI, and LAMPE), 1909, A., i, 236.
- α -Carboxydidihydrocinnamanilide. See Benzylmalonic acid, anilide of.
- 2'-Carboxy-2:5-dimethoxydiphenyl sulphide (CLARKE and SMILES), 1911, T., 1537.
- 2-Carboxy-5:6-dimethoxyphenoxyacetic acid (HERZIG and POLLAK), 1903, A., i, 713.
- methyl ester (HERZIG and POLLAK), 1904, A., i, 909.
- 2-Carboxy-4:5-dimethoxyphenylacetic acid, preparation of (PERKIN and ROBINSON), 1907, T., 1082; 1908, T., 516.
- 3-Carboxy-4:6-dimethoxyphenylglyoxylic acid (EYKMAN, BERGEMA, and HENRARD), 1905, A., i, 359.
- 6-Carboxy-3:4-dimethoxyphenylglyoxylic acid, synthesis of, and its silver salt and oxime (HARDING and WEIZMANN), 1910, T., 1129; P., 130.
- 2-Carboxydiphenyl sulphide, 2':5'-di-hydroxy- (CLARKE and SMILES), 1911, T., 1537; P., 212.

- 2-Carboxydiphenyl sulphone, 4'-amino-, acetyl derivative, 2'-nitro-, and its methyl ester, 4'-nitro-, and its methyl and ethyl esters** (MAYER), 1909, A., i, 825.
- sulphoxide and its salts and nitro-derivative (WEEDON and DOUGHTY), 1905, A., i, 345.
- 2'-nitro-, and its methyl and ethyl esters (MAYER), 1909, A., i, 825.
- 3'- and 4'-Carboxydiphenyl ether, 2:4-diamino-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 456.
- Carboxydiphenylthiocarbamide** (DORAN and DIXON), 1905, T., 343; P., 77.
- 1- α -Carboxy-*n*-dodecyl- Δ^4 -cyclopentene and 1- α -Carboxy-*n*-dodecyl-1:4-bicyclopentane.** See Chaulmoogric acid.
- 2-Carboxy-4-ethoxyphenylthiolacetic acid** (LESSER), 1911, A., i, 456.
- Carboxyethyl-.** See Carbethoxy-.
- 2-Carboxy-5-ethylthiophenylthiolacetic acid** (LESSER) 1911, A., i, 456.
- β -Carboxyglutaconic acid, α -amino-, ethyl ester** (WISLIGENUS and WALDMÜLLER), 1911, A., i, 603.
- α -Carboxy- $\Delta^{\alpha\beta}$ -glutaconic acid and its ethyl ester** (SILBERRAD and EASTERFIELD), 1904, T., 862; P., 114, 141.
- Carboxyglutaric acid, ethyl ester, sodium derivative, action of halogens and of ethyl bromocarboxyglutarate on** (SILBERRAD and EASTERFIELD), 1904, T., 862; P., 114, 141.
- Carboxyglutaric acid, α -bromo-, ethyl ester** (THORPE), 1912, T., 254.
- $\alpha\gamma$ -dihydroxy-, and its salts and lactone** (KILIANI and HEROLD), 1905, A., i, 739.
- Carboxyglyoxaline-1-diazobenzenesulphonic acid and its 2-methyl and 2-phenyl derivatives** (BURIÁN), 1904, A., i, 354.
- Carboxyguaiacolphenylthiocarbamide** (DORAN and DIXON), 1905, T., 343; P., 79.
- Carboxyhæmochromogen** (PREGL), 1905, A., i, 622.
- Carboxyhæmoglobin, action of various conditions on** (HARTRIDGE), 1912, A., i, 399.
- sensitive reaction for (DE DOMINICIS), 1908, A., ii, 643.
- Carboxyhexamethenyl- δ -keto-hexahydrobenzoic acid.** See 4-Carboxy-1-cyclohexylidene-1-cyclohexan-2-one-5-carboxylic acid.
- 4-Carboxy-1-cyclohexylidene-1-cyclohexan-2-one-5-carboxylic acid** (carboxyhexamethenyl- δ -keto-hexahydrobenzoic acid), and its ethyl ester (PERKIN), 1904, T., 419; P., 51.
- 2-Carboxyindole-3-acetic acid, ethyl ester** (WISLIGENUS and WALDMÜLLER), 1911, A., i, 604.
- Carboxyl group, constitution of** (SMEDLEY), 1909, T., 231; P., 16.
- a case of the inhibiting action of the (NIERENSTEIN and WEBSTER), 1908, A., i, 89.
- replacement of the sulphonic group by the, in azo-compounds (LANGER), 1908, A., i, 300.
- molecular transpositions and migration of the, in the dehydration of certain hydroxy-acids (BLAISE and COURTOT), 1905, A., i, 853.
- introduction of the, into phenol, by the action of carbon dioxide (TYMSTRA), 1905, A., i, 439.
- Carboxylase** (NEUBERG and KARCZAG), 1911, A., ii, 1020.
- Carboxylic acids.** See under Acids.
- Carboxymethæmoglobin, influence of light on the formation of** (GRÖBER), 1908, A., i, 486.
- 2-Carboxy-5-methoxyphenoxyacetic acid** (ENGELS, PERKIN, and ROBINSON), 1908, T., 1146.
- synthesis of (PERKIN and ROBINSON), 1908, T., 504.
- 2-Carboxy-5-methoxyphenylthiolacetic acid** (LESSER), 1911, A., i, 456.
- Carboxymethylacetylcarbamide** (VOSWINKEL), 1912, A., i, 837.
- γ -Carboxymethyl- γ -acetyl- β -phenyl- and - β -propylbutyronitrile- α -amides** (GUARESCHI), 1906, A., i, 801.
- Carboxymethylaminolauronic acid** (WEIR), 1911, T., 1273; P., 154.
- α -Carboxymethylamino- α -phenylacetamide** (CLARKE and FRANCIS), 1911, T., 322.
- α -Carboxymethyl-*ab*-diphenylthiocarbamide, preparation of** (DIXON and TAYLOR), 1908, T., 697; P., 74.
- 2-Carboxy-4:5-methylenedioxyphenylacetic acid** (PERKIN and ROBINSON), 1907, T., 1086.
- 3-Carboxy-4-methyl-4-ethyltrimethylenedicarbonimide, amide of, and its silver salt** (GHIGLIENO), 1910, A., i, 505.
- 1-Carboxy-4-methylfulvene-2-propionic acid** (DUDEN and FREYDAG), 1903, A., i, 420.

- Carboxymethyliminodiacetic acid** and its derivatives (JONGKEES), 1908, A., i, 960.
- N*-Carboxymethyl-leucine, -phenylalanine, and -*C*-phenylglycine, and their anhydrides (LEUCHS and GEIGER), 1908, A., i, 541.
- N*-Carboxymethylmethylantranilic acid (HOUBEN and FREUND), 1909, A., i, 795.
- 1-Carboxy-4-methylcyclopentadiene-2-propionic acid**, and its esters, salts and bromo-derivatives (DUDEN and FREYDAG), 1903, A., i, 420.
- Carboxymethylphenacylbarbituric acid** (KÜHLING), 1910, A., i, 781.
- Carboxymethylphenacyldialuric acid**, and its acetyl derivative (KÜHLING), 1910, A., i, 781.
- 6-Carboxy-3-methylphenylthiolacetic acid** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 234.
- 3-Carboxymethylrhodanic acid**. See Rhodanineacetic acid.
- Carboxymethylserine**, ethyl ester (LEUCHS and GEIGER), 1906, A., i, 805.
- Carboxymethyl-*o*-thiobenzoic acid** (KALLE & Co.), 1908, A., i, 451.
- Carboxymethylthiocarbimide** and the action of diphenylamine on (DIXON and TAYLOR), 1908, T., 696; P., 74.
- 2-Carboxymethylthiol-4- and -5-acetylaminobenzoic acid** (KALLE & Co.), 1911, A., i, 667.
- 2-Carboxymethylthiol-4-ethylthiolbenzoic acid** (KALLE & Co.), 1911, A., i, 667.
- 2-Carboxymethylthiol-4- and -5-ethyl-xanthatobenzoic acid** (KALLE & Co.), 1911, A., i, 667.
- 2-Carboxymethylthiol-5-methoxybenzoic acid** (KALLE & Co.), 1911, A., i, 666.
- 2-Carboxymethylthiol-5-methylthiolbenzoic acid** (KALLE & Co.), 1911, A., i, 667.
- 8-Carboxymethylthiolnaphthoic acid**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 797.
- 2-Carboxy-5-methylthiolphenylthiolacetic acid** (KALLE & Co.), 1912, A., i, 126.
- Carboxymethyl-dithiourethane**. See Carbamylglycollic acid, dithio-.
- 1-Carboxynaphthyl-2-thiolacetic acid** (KALLE & Co.), 1912, A., i, 208.
- 3-Carboxynaphthyl-2-thiolacetic acid** (KALLE & Co.), 1912, A., i, 209.
- α -8-Carboxynaphthylthiolacetic acid** (FRIEDLÄNDER, ECKSTEIN, and VOROSCHTSOFF), 1912, A., i, 294.
- β -1- and -3-Carboxynaphthylthiolacetic acids** (FRIEDLÄNDER, ECKSTEIN, and VOROSCHTSOFF), 1912, A., i, 293.
- p*-Carboxyphenoxyacetamide, *m*-amino- and *o*-nitro-, methyl esters (EINHORN and RUPPERT), 1903, A., i, 260.
- 2-Carboxyphenyl dichloro-orthophosphate**, 6-chloro-2-chloro- (ANSCHÜTZ and ANSPACH), 1906, A., i, 503.
- dihydrogen phosphate, 4-chloro-, and orthophosphate, 4-chloro-2-chloro- (ANSCHÜTZ and ANSPACH), 1906, A., i, 503.
- metaphosphate and dichloro-orthophosphate, chloro- (ANSCHÜTZ), 1906, A., i, 501.
- sulphide, 5-, 2', 3', and 4'-amino-, and 5-, 2', 3', and 4'-nitro- and their derivatives (MAYER), 1909, A., i, 825.
- sulphone, 3-nitro- (MAYER), 1909, A., i, 825.
- sulphoxide, 3'-nitro-, and its methyl ester, and 4'-nitro-, and its methyl and ethyl esters (MAYER), 1909, A., i, 825.
- o*-Carboxyphenylacetamide (*homophthalamic acid*), formation of, from 2-isom-nitroso-1-hydrindone (PETERS), 1907, A., i, 221.
- o*-Carboxyphenylacetic acid (PERKIN and ROBINSON), 1907, T., 1082.
- esterification of (WEGSCHEIDER and GLOGAU), 1904, A., i, 249.
- esters (DIECKMANN and MEISER), 1908, A., i, 894.
- o*-Carboxyphenylacetic anhydride, action of magnesium organic compounds on (BAUER and WÖLZ), 1911, A., i, 871.
- o*-Carboxyphenylacetonitrile, condensation of, with aldehydes, and its isom-nitroso-derivative (GYR), 1907, A., i, 416.
- Carboxyphenylaminoacetic acid**, dithio-, benzyl hydrogen ester and its barium salt (SIEGFRIED and WEIDENHAUPT), 1911, A., i, 117.
- o*-Carboxyphenylaminoacetonitrile (KNOEVENAGEL and KLÜCKE), 1904, A., i, 989.
- Carboxyphenyl-*iso*amyl- and -methylthiocarbamides** (DORAN and DIXON), 1905, T., 342; P., 77.

- 4-*p*-Carboxyphenylanthraquinone-1-carboxylic acid** (SEER and KARL), 1912, A., i, 572.
- Carboxyphenylarsenious oxide**, amino-, acetyl derivative (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 84.
- 1-Carboxyphenyl-5-arsinic acid**, 2-amino-, *N*-acetyl derivative of, and 2-hydroxy- (O. and R. ADLER), 1908, A., i, 492.
- 2-hydroxy-. See Salicylarsinic acid.
- Carboxyphenylazooacetoacetic acid**, ethyl ester, and its benzoylhydrazine (BÜLOW and SCHAUB), 1908, A., i, 706.
- α -Carboxy- γ -phenylbutyric acid**, γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 422.
- o*-Carboxy- γ -phenylbutyric acid** (KIPPING and HUNTER), 1903, T., 249; P., 11.
- m*-Carboxyphenylcamphoformeneamine and its carboxylic acid** (TINGLE and BATES), 1911, A., i, 55.
- 3-*o*-Carboxyphenyl-*o*-carbamylphenylphenotriazone** (MEYER), 1907, A., i, 318.
- α -*o*-Carboxyphenyl-cinnamic and -3:4-dimethoxycinnamic acids**, 2-amino- and 2-nitro- (PSCHORR and TAPPEN), 1906, A., i, 850.
- 3-Carboxyphenyl- μ -cyanoazophenylmethine**, 4'-nitro-4-hydroxy- (HUBEN, BRASSERT, ETTINGER, and KELLNER), 1909, A., i, 646.
- Carboxyphenyldiacetonitriles**, *m*- and *p*- (V. MEYER and SCHUMACHER), 1908, A., i, 910.
- o*-Carboxyphenylglyceryltropeine**, lactone of, and its additive salts (JOWETT and PYMAN), 1906, P., 317; 1907, T., 94.
- N*-Carboxy-*N*-phenylglycine anhydride** (LEUCHS and MANASSE), 1907, A., i, 771.
- p*-Carboxy-*p*-phenylglycineamide** (EINHORN and SEUFFERT), 1911, A., i, 46.
- p*-Carboxyphenylglycinediethylaminomethylamide**, ethyl ester (EINHORN and SEUFFERT), 1911, A., i, 45.
- p*-Carboxyphenylglycinepiperidinomethylamide**, ethyl ester, and its salts (EINHORN and SEUFFERT), 1911, A., i, 45.
- o*-Carboxyphenylglycollic acid**, ethyl ester and amides of (MERRIMAN), 1911, T., 912; P., 102.
- o*-Carboxyphenylhydrazinolutidinecarboxylic anhydride** (*lutidinobenzobisopyrazolone*) and its hydrochloride (MICHAELIS and REINGHAUS), 1909, A., i, 530.
- 2-Carboxyphenyliminoacetic acid**, phenylhydrazide and semicarbazide of, and their salts (GÄRTNER), 1904, A., i, 788.
- 6-Carboxyphenylmethylaminoacetic acid**, 2-bromo- (ETTINGER and FRIEDLÄNDER), 1912, A., i, 729.
- Carboxyphenylmethylbenziminazole**, *di*-nitrohydroxy-1-*o*-, *m*-, and *p*-, and their ethyl esters and silver salts (MELDOLA and HAY), 1909, T., 1041.
- 1-Carboxy-6-phenyl-4-methylfulvene-2-propionic acid** (DUDEN and FREYDAG), 1903, A., i, 421.
- ζ -*p*-Carboxyphenyl- α -methylheptoic acid** (PREGL), 1910, A., i, 321.
- 1-Carboxyphenyl-2-methylpyrrolidone-2-carboxylic acid** and its nitrile and methyl and ethyl ester-amides (WEBER), 1907, A., i, 1071.
- 3-*o*-Carboxyphenyl-2-methyl-4-quinazoline** (ANSCHÜTZ and SCHMIDT), 1903, A., i, 56, 57; (ANSCHÜTZ, SCHMIDT, and GREIFFENBERG), 1903, A., i, 57.
- μ -Carboxyphenyl-1:2-naphthiminazole-7-sulphonic acid**, 5-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 900.
- α -*o*-Carboxyphenyloxypropionic acid** (α -salicyloxypropionic acid), ethyl ester (AUWERS), 1912, A., i, 1010.
- 3-*o*-Carboxyphenylphenotriazone** (MEYER), 1907, A., i, 317.
- Carboxyphenylcyclopropanetrans-1:2-dicarboxylic acid** (*carboxyphenyltrimethylenetrans-1:2-dicarboxylic acid*) and its amino- and nitro-derivatives (BUCHNER and HEDIGER), 1904, A., i, 57.
- 2-*o*-Carboxyphenyl-4-quinazoline** (ANSCHÜTZ and SCHMIDT), 1903, A., i, 57.
- o*-Carboxyphenylselenolacetic acid** (LESSER and WEISS), 1912, A., i, 643.
- o*-Carboxyphenylsulpho-oxidoacetic acid** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 320.
- o*-Carboxyphenylthiolacetic acid** (*o*-carboxyphenylthioglycollic acid) and its esters (FRIEDLÄNDER), 1906, A., i, 378.
- and its ethyl hydrogen ester (FRIEDLÄNDER and MÜLLER), 1907, A., i, 335.
- preparation of (KALLE & Co.), 1907, A., i, 935; 1908, A., i, 605, 984.
- o*-Carboxyphenylthiolacetic acid**, 4- and 5-amino-, acetyl derivatives (KALLE & Co.), 1911, A., i, 1010.
- 5-amino-, acetyl derivative, and 5-chloro- (LESSER), 1911, A., i, 456.

- o*-Carboxyphenylthiolacetic acid, dichloro- (KALLE & Co.), 1911, A., i, 871.
- o*-Carboxyphenylthiolacetic acids, substituted, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 234.
- α -Carboxyphenylthiolbutyric acid (AUWERS), 1912, A., i, 1011.
- α -Carboxyphenylthiolpropionic acid (AUWERS), 1912, A., i, 1011.
- Carboxyphenyltrimethylenetrans-1:2-dicarboxylic acid. See Carboxyphenylcyclopropanetrans-1:2-dicarboxylic acid.
- 2-Carboxyphenylxanthic acid, 5-chloro-, ethyl ester (LESSER), 1911, A., i, 456.
- 9-*o*-Carboxyphenylxanthonium salts (DECKER, v. FELLEBERG, and FERRARIO), 1907, A., i, 1066.
- β -Carboxypropionylacetoacetic acid, ethyl ester, bisphenylhydrazine, phenylhydrazine salt of (SCHEIBER and LUNGWITZ), 1911, A., i, 836.
- 1-Carboxyisopropylamino-5:5-dimethylhydantoin and its 3-allyl, 3-ethyl, 3-methyl, and 3-phenyl derivatives (BAILEY, ACREE, and MILLER), 1904, A., i, 827.
- 1-Carboxyisopropylamino-5:5-dimethyl-2-thiohydantoin, and its 3-allyl, 3-ethyl, 3-methyl, and 3-phenyl derivatives (BAILEY, ACREE, and MILLER), 1904, A., i, 827.
- 1'-5-Carboxy-2-pyridonyl-2':5'-dimethylpyrrole-3':4'-dicarboxylic acid, 3-bromo-, 5-methyl 3':4'-diethyl ester (BÜLOW and FILCHNER), 1908, A., i, 1017.
- α -Carboxy-2-stilbenyloxyacetic acid (CZAPLICKI, v. KOSTANECKI, and LAMPE), 1909, A., i, 236.
- Carboxythioglycoll-phenyl and -phenylmethylhydrazides (FRERICHS and FÖRSTER), 1910, A., i, 192.
- 3-Carboxy-*o*-tolyl dichloro-orthophosphate, chloro-, and dihydrogen phosphate (ANSCHÜTZ, SCHROEDER, WEBER, and ANSPACH), 1906, A., i, 506.
- 4-Carboxy-3-tolyl metaphosphate and dichloro-orthophosphate, chloro-, and dihydrogen phosphate (ANSCHÜTZ and SCHROEDER), 1906, A., i, 506.
- 2-Carboxy-*p*-tolyl metaphosphate and dichloro-orthophosphate, chloro-, and dihydrogen phosphate (ANSCHÜTZ and SCHROEDER), 1906, A., i, 507.
- ω -Carboxy-*p*-tolylloxalacetic acid, imide of (WISLICENUS and PENNDORF), 1910, A., i, 560.
- o*-Carboxy-*m'*-tolylloxycetic acid (*p*-homosalicyloxycetic acid) and its diethyl ester (AUWERS), 1912, A., i, 1010.
- ω -Carboxy-*p*-tolylpyruvic acid (WISLICENUS and PENNDORF), 1910, A., i, 560.
- 4-Carboxy-*m*-tolylthiolacetic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 251.
- p*-Carboxytriphenylacetic acid (BISTRZYCKI and GYR), 1904, A., i, 315.
- 4-Carboxy-*m*-xylyl-5-thiolacetic acid (KALLE & Co.), 1912, A., i, 126.
- Carbylamines (isocyanides), fatty, direct hydrogenation of (SABATIER and MAILHE), 1907, A., i, 490.
- conditions of stability of (GUILLEMARD), 1907, A., i, 197, 300.
- action of azoimide on (OLIVERI-MANDALÀ and ALAGNA), 1911, A., i, 243.
- action of organo-magnesium compounds on (SACHS and LOEVY), 1904, A., i, 307.
- and nitriles, heats of combustion and formation of (LEMOULT), 1907, A., ii, 10.
- comparisons between (LEMOULT), 1909, A., ii, 644.
- comparisons of the behaviour of, towards metallic salts (HOFMANN and BUGGE), 1907, A., i, 489.
- character and reactions of (GUILLEMARD), 1908, A., i, 718.
- some methods of estimating (GUILLEMARD), 1907, A., ii, 141.
- Carcinas maenas*, carbohydrate metabolism in (v. SCHÖNBORN), 1910, A., ii, 1083.
- Carcinoma. See Cancer.
- Carcinoma ventriculi*, composition of the blood in (ERBEN), 1905, A., ii, 741.
- Cardamine amara*, essential oil of (KUNTZE), 1908, A., i, 196.
- Cardamom oil (HAENSEL), 1909, A., i, 312.
- Cardiac rhythm and ions (BENEDICT), 1905, A., ii, 330.
- restorers of the (LINGLE), 1905, A., ii, 835.
- Cardiac vagus, effect of calcium on the (AUER and MELTZER), 1909, A., ii, 253.
- Careleminic, *iso*Careleminic, and Careleminic acids, Caramyrin, and Careleresen (TSCHIRCH and SAAL), 1903, A., i, 430.
- Carielomic acids, *iso*Carielomic acid, and Carieleresen from "caricari" elemi (TSCHIRCH and REUTTER), 1904, A., i, 332.

- Carlina acaulis*, L. (carline thistle), oil of (SEMMLER), 1906, A., i, 297.
- Carlina oxide** (SEMMLER and ASCHER), 1909, A., i, 597; (SEMMLER), 1910, A., i, 297.
- Carlinene and Carlina oil** (SEMMLER), 1906, A., i, 297.
- Carlosite** from California (LOUDERBACK; BLASDALE), 1907, A., ii, 705.
- Carmin**, β -bromo-, constitution of, and acetyl derivative of (ROHDE and DORFMÜLLER), 1910, A., i, 492.
- Carminazarin** and its potassium salt, and **Carminazarinquinone** (DIMROTH), 1909, A., i, 485.
- Carminic acid** (DIMROTH), 1909, A., i, 485.
and its salts (PERKIN and WILSON), 1903, T., 138.
di-, tetra-, penta-, and hexa-methoxy-derivatives (C. and H. LIEBERMANN), 1909, A., i, 486.
- Carminoquinone** (DIMROTH), 1909, A., i, 486.
- Carnallite**, specific gravity of (PRZIBYLLA), 1904, A., ii, 416.
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and hematite, regular intergrowth of (JOHNSON), 1909, A., ii, 410.
- Carnauba wax**. See under Wax.
- Carnaubic acid**, isolation of, from ox kidney (DUNHAM), 1908, A., ii, 407.
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- Carnaubon** (DUNHAM and JACOBSON), 1910, A., i, 215.
- Carnegieite**, equilibrium of anorthite with (BOWEN), 1912, A., ii, 774.
- Carnelley and Thomson's rule**, new exception to (KREMANN), 1907, A., ii, 311.
- Carnine and inosic acid** (HAISER and WENZEL), 1908, A., i, 561; 1909, A., i, 322, 540; 1910, A., i, 543.
- Carnitine** (ENGELAND), 1910, A., i, 824.
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- Carnitine**, compounds of (KRIMBERG), 1907, A., i, 264.
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- dl-IsoCarnitine**, synthesis of (ROLLETT), 1910, A., i, 824.
- Carnivora**, value of amides in (VÖLTZ and YAKUWA), 1908, A., ii, 207.
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- Carnivorous metabolism**. See under Metabolism.
- Carnose** and its phenylhydrazone and *p*-bromophenylhydrazone (LEVENE and JACOBS), 1909, A., i, 541.
- Carnosine** (v. GULEWITSCH), 1907, A., i, 870.
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- 1:2-Chrysoquinone**, 8-hydroxy-, and its derivatives (BESCHKE and DIEHM), 1911, A., i, 889.
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- isomeric nitro-, electrolytic reduction of (MARIE), 1905, A., i, 554.
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- o*-, *m*-, and *p*-nitro-, velocity of esterification of, by means of alcoholic hydrogen chloride (KAILAN), 1908, A., ii, 27.
- 2:6-dinitro-, and its ethyl ester (REICH and PINCZEWSKI), 1912, A., i, 361.
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- m*- and *p*-nitroso-, and their esters (ALWAY and BONNER), 1904, A., i, 891.
- α -thio- (HINSBERG), 1911, A., ii, 874.
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- o*-chloro-, and its derivatives (STOERMER, BRÄUTIGAM, FRIDERICI, and NECKEL), 1911, A., i, 297.
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- Cinnamic** *o*-**cinnamoyloxybenzoic anhydride** (EINHORN and SEUFFERT), 1911, A., i, 54.
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- Cinnamoylhydrazide** and its derivatives (MUCKERMANN), 1909, A., i, 838; 1911, A., i, 682.
- 2-Cinnamoyliminobenziminazole** (PIERON), 1911, A., i, 166.
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- 2-Cinnamoyl-5-methoxyphenoxycetic acid**, and its ethyl ester (ABELIN and V. KOSTANECKI), 1910, A., i, 631.
- 2-Cinnamoyl- α -naphthol**, 4-nitro-, and 2-*m*-nitro- (TORREY and CARDARELLI), 1911, A., i, 68.
- o*-**Cinnamoyloxybenzoic anhydride** (EINHORN), 1910, A., i, 741; (EINHORN and SEUFFERT), 1911, A., i, 54.
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- 5-Cinnamylidene-3-allylrhodanic acid** (ANDREASCH and ZIPSER), 1903, A., i, 856.
- 4-Cinnamylideneamino-2-acetyl- α -naphthol** (TORREY and CARDARELLI), 1911, A., i, 68.
- Cinnamylideneaminobenzoic acid** (v. PAWLEWSKI), 1904, A., i, 317.
- p*-Cinnamylideneaminodimethylaniline** and its hydrochlorides (MOORE and GALE), 1908, A., i, 369.

- 3-Cinnamylidenamino-2-methyl-4-quinazolinone** (BOGERT, BELL, and AMEND), 1911, A., i, 163.
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- α -Cinnamylidenepropionic acid** and its compound with bromine (BAIDAKOWSKY), 1906, A., i, 178.
- β -Cinnamylidenepropionic acid** and its salts (FITTIG and BATT), 1904, A., i, 744.
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- 14:14'-Cœramidonyl ketone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 794.
- Cœrdioxonium salts**, **Cœrdioxen**, and **Cœrdioxendiol** (DECKER, v. FELLENBURG, and FERRARIO), 1907, A., i, 1067.
- Cœrdithien**, **Cœrdithionium salts**, and **Cœrdithiendiol** (DECKER, v. FELLENBURG, and FERRARIO), 1907, A., i, 1067.
- Cœroxene** and its derivatives and isologues (DECKER, FERRARIO, LAUBE, SASSU, SCHENK, and WÜRSCH), 1906, A., i, 687.
- Cœroxinol** and its acetyl derivative and **Cœroxonol** and its ethyl ether and **Cœroxonium salts** (DECKER and FERRARIO), 1906, A., i, 688.
- Cœroxonium salts**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1067.
- Cœroxonol**, ethers of (DECKER, v. FELLENBURG, and FERRARIO), 1907, A., i, 1066.
- Cœrthienol**, **Cœrthionol**, and **Cœrthionium salts** (DECKER and WÜRSCH), 1906, A., i, 690.
- Cœrthionium salts**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1068.
- Cœrulin hydrochloride** and sulphate (HELLER and LANGKOPF), 1906, A., i, 672.
- Cœrulignone** (*cedrivet*) (SCHLENK, KELLER, and KNORR), 1909, A., i, 809.
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- Coffalic acid** (GORTER), 1908, A., i, 346.
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- Colchicine**, estimation of, colorimetrically (FABINYI), 1912, A., ii, 503.
- Colchide** and its picrate and acetyl and benzoyl derivative (WINDAUS), 1911, A., i, 905.
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- Colloid**, diastatic properties of a (DUCLAUX), 1906, A., ii, 660.
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- Colloids, theory of (JORDIS), 1905, A., ii, 153, 447; 1908, A., ii, 675, 820, 1023; (BILLITER), 1905, A., ii, 305; (LANDSTEINER), 1905, A., ii, 447; (BECHHOLD), 1905, A., ii, 511; (DUCLAUX), 1910, A., ii, 108.
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- Colloids**, estimation of, in arable soils (KÖNIG, HASENBÄUMER, and HASLER), 1911, A., ii, 1033.
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- Colloid chemistry** (BRITISH ASSOCIATION REPORT), 1909, A., ii, 473; (v. WEIMARN), 1910, A., ii, 940.
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Colouring Matters, Natural Vegetable.

- See also:—
 Acacatechin.
 Alizarin.
 Alkaverdin.
 Aloin.
 Anthocyanins.
 Anthragallol.

Colouring Matters, Natural Vegetable.

See also:—

- Apigenin.
 Azofrin.
 Berberine.
 Bilipurpurin.
 Bixin.
 Brazilin.
 Butein.
 Carminic acid.
 Catechins.
 Chlorophyll.
 Chrysin.
 Curcumin.
 • Cyanomaclurin.
 Daphnetin.
 Datisacetin.
 Dimethylindigotins.
 Dossetin.
 Dura-santalini.
 Ellagic acid.
 Eriodanol.
 Erythrodestrin.
 Fisetin.
 Fukugetin.
 Galangin.
 Gallein.
 Gossypetin.
 Hæmatein.
 Hæmatoxylin.
 Hæmerythrin.
 Hæmocyanin.
 Hæmoglobin.
 Hemi-indigotin.
 Hesperitin.
 Hibiscetin.
 Hypericin.
 Indigo.
 Indigotin.
 Indigo-brown.
 Indigo-yellow.
 Indirubin.
 Isatin.
 Kaempheride.
 Kaempherol.
 Kamala.
 Kermesic acid.†
 Lipochrome.
 Luteolin.
 Maclurin.
 Mesoporphyrin.
 Methylindigotins.
 Morin.
 Morindin.
 • Myricetin.
 Nyctanthin.
 Phylloporphyrin.
 Quercimeritrin.
 Quercitin.
 Quercitrin.

Colouring Matters, Natural Vegetable.

See also :—

*iso*Quercitrin.

Robigenin.

Rosocyanin.

Rottlerin.

ψ -Rottlerin.

Rutin.

Saponaretin.

Thujorhodin.

Trifolitin.

Urobilin.

Urochrome.

Vitexin.

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Columbiacopalic acid (MACHENBAUM), 1912, A., i, 124.

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- ϵ -Coniceine,** constitution and synthesis of (LÖFFLER), 1909, A., i, 326.
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- iso***Coumarin-4-carboxylic acid** and its esters (DIECKMANN and MEISER), 1908, A., i, 894.
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- ψ -**Cumene** (1:2:4-*trimethylbenzene*), occurrence of, in Roumanian petroleum (PONI), 1906, A., i, 9.
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- ψ -**Cumene**, 6-chloro- (ORTON and KING), 1911, T., 1189.
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- ψ -**Cumeneazobenzene** and its derivatives (WILGERODT and HERZOG), 1905, A., i, 549.
- ψ -**Cumeneazo-orscinol**, 6-bromo- (ORTON and EVERATT), 1908, T., 1020.
- Cumeneazo-3-phenylisooxazolone** (MEYER), 1911, A., i, 341.
- ψ -**Cumene-4-azoresorcinol**, 6-bromo- (ORTON and EVERATT), 1908, T., 1019.
- p*-**Cumenesulphinic acid**, preparation of (KNOEVENAGEL and KENNER), 1908, A., i, 971.
- ψ -**Cumenesulphinic acid**, preparation of (KNOEVENAGEL and KENNER), 1908, A., i, 971.
- p*-**Cumenesulphinic anhydride**, preparation of (KNOEVENAGEL and POLACK), 1908, A., i, 971.
- ψ -**Cumenesulphinic anhydride**, preparation of (KNOEVENAGEL and POLACK), 1908, A., i, 971.
- ψ -**Cumenesulphon-acetonitrile** and -ethenylaminoxime (TRÖGER and VOLKMER), 1905, A., i, 356.
- ψ -**Cumenesulphondiethylacetonitrile** (TRÖGER and VASTERLING), 1905, A., i, 871.
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- ψ -**Cumenol**, coumarins from (CLAYTON), 1908, T., 2020.
- ψ -**Cumenol alcohol** and its diacetate and nitro-derivative (ZINCKE and V. HÖRST), 1907, A., i, 614.
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- 4- ψ -Cumenol-3-carbinol**. See *isoDuryl alcohol*, *o*-hydroxy-.

- β -Cumenyl- α -ethylhydracrylic acid** and its salts (KALISCHEFF), 1906, A., i, 178.
- 2-Cumenylideneaceto-1-naphthol** and its acetate (V. KOSTANECKI and STENZEL), 1907, A., i, 953.
- p*-Cumidine** and its benzoyl derivative (SACHS and WEIGERT), 1907, A., i, 1047.
- ψ -Cumidine**, aldol base from, and its derivatives (EDWARDS, GARROD, and JONES), 1912, T., 1388; P., 163.
- ψ -Cumidine**, 6-bromo-, preparation of, and its acetyl derivative (ORTON, COATES, and BURDETT), 1907, T., 54.
- 2-bromo-5-nitro- (BLANKSMA), 1905, A., i, 426.
- 6-chloro-, and its acetyl derivative (ORTON and KING), 1911, T., 1189.
- ψ -Cumidinesulphonic acid**, nitro-, and its reactions (BLANKSMA), 1905, A., i, 425.
- ω - ψ -Cumidinoacetophenone** and its derivatives (BUSCH and HEFELE), 1911, A., i, 584.
- ψ -Cumidinomethyleneacetoacetic acid**, ethyl ester (DAINS and BROWN), 1909, A., i, 781.
- ψ -Cumidinomethyleneacetoacetyl- ψ -cumidide** (DAINS and BROWN), 1909, A., i, 781.
- ψ -Cumidinomethylenecyanoacetic acid**, ethyl ester (DAINS and BROWN), 1909, A., i, 782.
- 4- ψ -Cumidinomethylene-1-phenyl-3-methyl-5-pyrazolone** (DAINS and BROWN), 1909, A., i, 782.
- 3- ψ -Cumidino 4:5:7-trimethyloxindole** (HELLER and ASCHKENASI), 1910, A., i, 739.
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- ψ -Cuminaldehyde** and its amino-, hydroxy-, and nitro-derivatives (GATTERMANN), 1906, A., i, 592.
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- p*-Cuminaldehyde-*p*-cuminyldiazone** and its derivatives (CURTIUS and KORTE), 1912, A., i, 309.
- Cuminaldehyde-*p*-methoxyphenylhydrazone** (PADOA and SANTI), 1911, A., i, 1029.
- Cuminaldehyde- α - and - β -naphthylhydrazones** (PADOA and GRAZIANI), 1909, A., i, 964.
- Cuminaldehyde-*p*-tolylhydrazones** (PADOA and GRAZIANI), 1909, A., i, 965.
- Cuminaldehyde-*o*- and -*m*-tolylhydrazones** (PADOA and GRAZIANI), 1910, A., i, 135.
- Cuminaldehyde-1:4:5-xylyldiazones** (PADOA and GRAZIANI), 1910, A., i, 778.
- Cuminaldehyde-1:2:4- and -1:3:4-xylyldiazones** (PADOA and GRAZIANI), 1910, A., i, 509.
- Cuminaldioximes**, α - and β -, and their reactions (BECK and HASE), 1907, A., i, 825.
- Cuminanisoin** (EKECRANTZ and AHLQVIST), 1908, A., i, 993.
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- iso*Cuminic acid (SEMMLER), 1903, A., i, 353.
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- Cuminil-1:3:4-xylylosazone** (PADOA and BOVINI), 1912, A., i, 224.
- Cuminoil**, electrolytic oxidation of (LAW), 1906, T., 1444; P., 197.
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- p*-Cuminyloimide** (CURTIUS and KORTE), 1912, A., i, 310.
- Cuminylobutanones**, α - and γ - (HARRIES and WARUNIS), 1904, A., i, 429.
- p*-Cuminyldiazine** and its hydrochloride and nitroso- (CURTIUS and KORTE), 1912, A., i, 310.
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- Cuminylidene carbamidoxime** (CONDUCHÉ), 1908, A., i, 155.
- α -Cuminylidene- $\delta\delta$ -dimethylparaconic acid** (STOBBE and LEUNER), 1906, A., i, 23.
- Cuminylidenehippuric acid** and its esters, amide, and imide (ERLENMEYER and MATTER), 1905, A., i, 238.

- α -Cuminylidene methyl propyl ketone, and its dibromide, semicarbazone, oxime, and phenylhydrazone (WARUNIS and LEKOS), 1910, A., i, 269.
- Cuminylidene isonitrosoacetone and its oxime, semicarbazone, and ψ -nitrole (HARRIES and MILLS), 1904, A., i, 429.
- γ -Cuminylidene propyl methyl ketone and its dibromide, oxime, and semicarbazone (WARUNIS and LEKOS), 1910, A., i, 269.
- α -Cuminyl methyl propyl ketone, and its semicarbazone (WARUNIS and LEKOS), 1910, A., i, 269.
- γ -Cuminyl propyl methyl ketone and its semicarbazone (WARUNIS and LEKOS), 1910, A., i, 269.
- 4-Cuminyloquinoline. See 4-*p*-isopropylbenzylisquinoline.
- Cuminytoluidine, morphotropy of (ROSICKÝ), 1909, A., i, 458.
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- ψ -Cumoyl acrylic acid (KÓZNIEWSKI and MARCHLEWSKI), 1906, A., i, 759.
- ψ -Cumyl benzyl ether and dibromobromide, bromohydroxy-derivatives, and their compounds with bases (AUWERS and KIPKE), 1906, A., i, 263.
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- ψ -Cumylaniline, 3:6-dibromo-*p*-hydroxy-, derivatives of (AUWERS and DOMBROWSKI), 1906, A., i, 380.
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- β -Cumyl- $\Delta\beta$ -butenoic acid, γ -cyano- (GUARESCHI), 1907, A., i, 1004.
- ψ -Cumylisobutyl ketone, and its phenylhydrazone (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- ψ -Cumylisobutyramide (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- γ - ψ -Cumylbutyric acid, and its amide (WILLGERODT and SCHOLTZ), 1910, A., i, 392.
- ψ -Cumyl dichlorovinylidonium hydr-oxide, salts of (WILLGERODT and MEYER), 1912, A., i, 22.
- ψ -Cumyleyanamide and the carbamide and its benzoyl derivative (PIERRON), 1908, A., i, 925.
- ψ -Cumyldeoxyn and its oxidation (NASTUKOFF), 1907, A., i, 413.
- δ Cumyl- $\alpha\alpha$ -dimethyl-fulgenic acid and -fulgide and their isomerides (STOBBE and LEUNER), 1906, A., i, 22.
- ψ -Cumylthiocarbamic acid, ethyl ester (KALUZA), 1910, A., i, 130.
- 2- ψ -Cumyl-3-ethylisindolinone, 3-hydroxy- (KUCHARA and KOMATSU), 1911, A., i, 208.
- ψ -Cumylglycyl ethyl urethane (FRERICHS and BREUSTEDT), 1903, A., i, 18.
- β - ψ -Cumylhydantoin (FRERICHS and BREUSTEDT), 1903, A., i, 18.
- ψ -Cumylhydroxylamine (BAMBERGER), 1910, A., i, 549.
- Cumylitaconic acid and its anhydride (STOBBE and HÄRTEL), 1911, A., i, 377.
- ψ -Cumylmethylaniline, 3:6-dibromo-*p*-hydroxy-, methyl ether and acetate (AUWERS and REICHEL), 1904, A., i, 997.
- 1- ψ -Cumyl-2-methylbenzimidazole, 4:7-dinitro-6-hydroxy- (MELDOLA and HAY), 1908, T., 1677.
- Cumylparaconic acid (STOBBE and HÄRTEL), 1911, A., i, 377.
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- ψ -Cumylphthalamide (KUCHARA and KOMATSU), 1911, A., i, 207.
- as*- ψ -Cumylphthalamide (KUCHARA and KOMATSU), 1911, A., i, 208.
- β - ψ -Cumylpropionic acid and its amide (WILLGERODT and SCHOLTZ), 1910, A., i, 392.
- 3- ψ -Cumylrhodanic acid (KALUZA), 1910, A., i, 130.
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- ψ -Cumylthiolacetic acid (KALLE & Co.), 1912, A., i, 354, 557.
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- Curbine** and its hydrochloride (LEUCHS and PEIRCE), 1912, A., i, 898.
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- Decahydro-α-naphthyl ketone** and its oxime, phenylhydrazine, semicarbazone, and sodium hydrogen sulphite (LEROUX), 1907, A., i, 538.
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- β Deoxybenzoic acid** and its lactone, action of hydrazine on (WÖBLING), 1906, A., i, 49.
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- Diacetonealkamines**, derivatives of (KOHN), 1904, A., i, 378, 932, 933; 1905, A., i, 928; 1907, A., i, 338, 693; (KOHN and MORGENSTERN), 1907, A., i, 681, 683; (KOHN and SCHLEGL), 1907, A., i, 682.
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- 3:4-Diacetoxy-*N*-acetylphenylethylmethylamine (PYMAN), 1910, T., 273.
- $\alpha\delta$ -Diacetoxydipic acid, ethyl ester (DAVIES, STEPHEN, and WEIZMANN), 1912, P., 94.
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- 3:6-Diacetoxy-9-phenylxanthonium chloride** (POPE and HOWARD), 1910, T., 1027.
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- v*-Diacetoxyterephthalic acid** and its ethyl ester (THIELE and GÜNTHER), 1906, A., i, 744.
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- 3:5-Diacetyl-*p*-cresol**, dichloro-, and its acetate (FRIES and FINCK), 1909, A., i, 43.
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- 7:13-Diacetyl-5:13-dihydroquinoline** (FICHTER and ROHNER), 1911, A., i, 86.
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- 2:4-Diacetyl-2:4-dimethylol-1-methyl- Δ^6 -cyclohexen-5-one**, and its dioxime (KNOEVENAGEL), 1903, A., i, 639.
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- $\beta\beta$ -Diacetyl- $\alpha\alpha$ -dimethylpropionic acid**, ethyl ester, and its pyrazole compound (GARNER, REDDICK, and FINK), 1909, A., i, 552.
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- 3:5-Diacetyl-2:6-dimethylpyridone** (PALAZZO and ONORATO), 1905, A., i, 460.
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- 2:2'-Diacetyldiphenyl** and its dioxime and diphenylhydrazones (ZINCKE and TROPP), 1909, A., i, 35.
- 4:4'-Diacetyldiphenylmethane** (DUVAL), 1908, A., i, 277.
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- $\beta\beta$ -Diacetyl- $\alpha\alpha$ -ethylpropionic acid**, ethyl ester, and its pyrazole compound (GARNER, REDDICK, and FINK), 1909, A., i, 552.
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- $\alpha\gamma$ -Diacetylglutaric acid**, ethyl ester (SIMONSEN and STOREY), 1909, T., 2111; P., 290.
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- $\alpha\gamma$ -Diacetylheptane- $\alpha\gamma$ -dicarboxylic acid**, ethyl ester, synthesis of (v. BRAUN), 1907, A., i, 893.
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- s -Diacetylhydrazide**, mercury salt (STOLLE, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
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- Diacetylhydrazoxime** and its derivatives (FORSTER and DEY), 1912, T., 2238; P., 275.
- 4:6-Diacetyl-5- p -hydroxy- m -methoxyphenyl-3-methyl- Δ^2 -cyclohexenone**, oxime of (KNOEVENAGEL and ALBERT), 1905, A., i, 63.
- 2:6-Diacetyl-4-ketopenthiophendithiophen**, 3:5- di hydroxy-, and its triphenylhydrazones (APITZSCH and KELBER), 1910, A., i, 410.
- Diacetyl-laxerol** (MORGENSTERN), 1912, A., i, 709.
- Diacetylmalonic acid**, ethyl ester, action of hydroxylamine on (PALAZZO and CARAPELLE), 1905, A., i, 858.
- $\alpha\gamma$ -Diacetyl- δ -methylamino- β -phenyl- $\Delta\gamma$ -hexenoic acid** (*acetylacetone* *methylaminebenzylideneacetoacetic acid*), ethyl ester (KNOEVENAGEL, ERLER, and REINECKE), 1903, A., i, 652.
- 2:4-Diacetyl-1-methyl- Δ^6 -cyclohexen-5-one** (KNOEVENAGEL), 1903, A., i, 638.
- 2:4-Diacetyl-4-methylol-1-methyl- Δ^6 -cyclohexen-5-one** (KNOEVENAGEL), 1903, A., i, 639.
- 3:5-Diacetyl-4-methylpyrazole** and its dioxime (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 209.
- 1- β -Diacetyl-6-methyltetrahydroquinoline** (KUNCKEL), 1910, A., i, 636.
- Diacetylmorphine**, dichloro- (WIELAND and KAPPELMEIER), 1911, A., i, 746.
- Diacetylorthonitric acid**, formula of (PICTEL and GENEQUAND), 1903, A., i, 675.
- Diacetylosazone**, hydroxy- (DIELS and FARKAS), 1910, A., i, 535.

- Diacetylloxalic acid**, ethyl ester, phenylhydrazone and methylhydrazone of (DRELS and KOLLISCH), 1911, A., i, 230.
- Diacetylloxalylhydrazide** (BÜLOW and LOBECK), 1907, A., i, 301.
- 2:3-Diacetylcyclopentadiene**, 5-nitro-, and its salts and derivatives (HALE), 1912, A., i, 566, 994.
- 9:10-Diacetylphenanthrene** and its derivatives (WILLGERODT and ALBERT), 1911, A., i, 883.
- Diacetylphenolphthalein**, *tetrachloro-* (ORNDORFF and BLACK), 1909, A., i, 389.
- Diacetyl-N-phenylglycine anhydride** imino-, and its copper salt (FISCHER and GLUUD), 1909, A., i, 888.
- 2:4-Diacetyl-3-phenyl-1-methyl- Δ^6 -cyclohexen-5-one** (KNOEVENAGEL), 1903, A., i, 637.
- $\beta\beta$ -Diacetyl- α -phenylpropionic acid** (RUHEMANN), 1904, T., 1456; P., 206.
- 3:5-Diacetyl-4-phenylpyrazole** (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 209.
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- $\alpha\beta$ -Diacetylpropionic acid**, ethyl ester, action of hydrazine on (KORSCHUN), 1904, A., i, 614; (BÜLOW and SAUTERMEISTER), 1904, A., i, 690.
- $\alpha\beta$ -Diacetylpropionic acid**, β -oximino- (SCHMIDT and WIDMANN), 1909, A., i, 524.
- $\beta\beta$ -Diacetylpropionic acid**, ethyl ester, and its oxime, and pyrazole compound (GARNER, REDDICK, and FINK), 1909, A., i, 552.
- Diacetylprunol** (POWER and MOORE), 1910, T., 1105; P., 124.
- Diacetylresorcinol** (EYKMAN), 1904, A., i, 665.
- Diacetylrhein**, preparation of (ROBINSON and SIMONSEN), 1909, T., 1090; P., 76.
- O-N-Diacetylsalicylamide** (TITHERLEY and HICKS), 1911, T., 869; P., 102.
- Diacetylsantalol** and nitro- (CAIN and SIMONSEN), 1912, T., 1066; P., 140.
- Diacetylsuccinic acid**, ethyl ester, application of Hantzsch's ammonia reaction to the enolic forms of (KNORR and HÖRLEIN), 1904, A., i, 846.
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- Diacetylsuccinic acid**, ethyl ester, condensation of, with semicarbazide (BÜLOW, RIESS, and SAUTERMEISTER), 1905, A., i, 660.
- Diacetyltartaric acid** (*diacetoxy succinic acid*), conductivity and dissociation of (DEAKIN and RIVETT), 1911, P., 816; 1912, T., 127.
- Diacetyl-d-tartaric acid**, menthyl ester, rotation and solution-volume of (PATTERSON and TAYLOR), 1905, T., 39, 126; P., 15.
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- Diacridines** (BAEZNER, GUEORGUIEFF, and GARDIOL), 1906, A., i, 901.
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- Diacrylic acid**, hydroxylamino-, methyl ester, oxalate of, and its hydrochloride and hydroxamic acid of (HARRIES and HAARMANN), 1904, A., i, 231.
- Diacylanilides**, halogen-substituted, isomeric change of, into acylaminoketones (ANGEL), 1912, T., 515; P., 46.
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- $\alpha\beta$ -Diacylcarboxylic acids**, ethyl esters, action of ammonia on (BORSCHÉ and FELS), 1907, A., i, 80.
- Diacylhydrazide chlorides**, preparation of (STOLLÉ), 1906, A., i, 453; (STOLLÉ and THOMAE), 1906, A., i, 461; (STOLLÉ and WEINDEL), 1906, A., i, 707; (STOLLÉ and BAMBACH), 1906, A., i, 709.
- Diacyl- ψ -thiocarbamides**, molecular rearrangement of unsymmetrical to isomeric symmetrical (JOHNSON and JAMIESON), 1906, A., i, 351.
- Dialanine** and its hydrochloride and platinichloride (GABRIEL), 1906, A., i, 635.
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- Dialaninoquinone**, diethyl ester (FISCHER and SCHRADER), 1910, A., i, 270.
- Dialdan**, diacetyl derivative of (WEGSCHEIDER and SPÄTH), 1911, A., i, 113.
- Dialdehydes**, preparation of (ROGOFF), 1904, A., i, 173.

- Dialdehydes** aliphatic, preparation of (WOHL and SCHWEITZER), 1906, A., i, 232.
- β -Dialdehydes**, condensation of with acetylacetone (HALE), 1912, A., i, 566.
- 2:2'-Dialdehydo-6:6'-dimethyldiphenyl** (MAYER), 1912, A., i, 478.
- 2:2'-Dialdehydodiphenyl** and its phenylhydrazone (KENNER and TURNER), 1911, T., 2112; P., 93, 262. and its dioxime (MAYER), 1911, A., i, 870.
- 3:3'-Dialdehydodiphenyl, 4:4'-di-bromo-**, and **4:4'-dichloro-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 474.
- 3:3'-Dialdehydodiphenyl-4:4'-disulphonic acid** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 475.
- 3:3'-Dialdehydodiphenylmethane, 4:4'-dihydroxy-** (AUWERS), 1907, A., i, 918.
- 2:5-Dialdehydopyrrole, 3:4-dichloro-** (COLACICCHI), 1911, A., i, 225.
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- sulphides**, synthesis of (SABATIER and MAILHE), 1910, A., i, 536.
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- Dialkylacetamides**, bromo- (KALLE & Co.), 1905, A., i, 638; 1906, A., i, 485, 634.
- Dialkylacetic acids**, optically active (FISCHER, HOLZAPFEL, and V. GWINNER), 1912, A., i, 157.
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- ureides of** (GEBRÜDER VON NIESSEN), 1903, A., i, 798; (FISCHER and DILTHEY), 1905, A., i, 35.
- Dialkylacetoacetic acids and amides** (MEYER), 1907, A., i, 179, 297.
- Dialkylacetylcarbamides**, cyano- (CONRAD and ZART), 1905, A., i, 754.
- p*-Dialkylaminobenzaldehydes**, reactions of (SACHS and MICHAELIS), 1906, A., i, 575.
- p*-Dialkylaminobenzhydrylamines**, preparation of (MERCK), 1906, A., i, 661.
- Dialkylaminobenzoylbenzoic acid**, esters, action of magnesium phenyl bromide on (PÉARD), 1906, A., i, 755.
- Dialkylaminodimethylethylcarbinols** and their benzoyl derivatives, preparation of the alkyl haloids of (RIEDEL), 1907, A., i, 607.
- Dialkylaminomethanesulphonic acid salts** (KNOEVENAGEL), 1904, A., i, 867.
- Dialkylanilines, dinitro-**, action of nitrous acid on (VAN ROMBURGH), 1911, A., i, 281.
- 2:4-dinitro-**, oxidation of, with chromic anhydride (MULDER), 1906, A., i, 492.
- 5:5-Dialkylbarbituric acids** (FISCHER and DILTHEY), 1905, A., i, 35.
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- 5:5-Dialkylbarbituric acids, imino-**, preparation of (MERCK), 1905, A., i, 178, 179, 751; 1911, A., i, 572, 1035; (CONRAD), 1905, A., i, 751; (CONRAD and ZART), 1905, A., i, 754; (BASLER CHEMISCHE FABRIK), 1909, A., i, 266.
- 2-arylimino- and 2-arylhydrazino-**, preparation of (EINHORN), 1906, A., i, 538.
- p*-Dialkylbenzoquinones, dihydroxy-**, synthesis of (FICHTER, JETZER, and WEISS), 1908, A., i, 659.
- Dialkylbromoacetamides**, preparation of (HOERING), 1907, A., i, 1017.
- Dialkylcarbamides**, preparation of (FICHTER and BECKER), 1912, A., i, 15.
- oxygen ethers of** (McKEE), 1909, A., i, 635.
- Dialkylcyanoacetic acids**, esters, reactions of, with carbamide (MERCK), 1905, A., i, 178, 179.
- Dialkyldihydropyrimidone**, derivatives, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 704.
- 2:3-Dialkyldihydroquinazolones** and their derivatives (BOGERT and SEIL), 1907, A., i, 560.
- Dialkylglycollic acids**, cyanamides and ureides of (CLEMMENSEN and HEITMAN), 1908, A., i, 771.
- $\alpha\alpha$ -Dialkylhydracrylic acids** (BLAISE and MARCILLY), 1904, A., i, 218.

- $\alpha\beta$ -Dialkylhydroxylamines**, isomeric (JONES), 1907, A., i, 897.
- $\beta\beta$ -Dialkylhydroxylamines**, preparation of (WIELAND), 1903, A., i, 686; (BEWAD), 1907, A., i, 671, 906.
- $\alpha\alpha$ -Dialkyl- β -keto-alcohols** (BLAISE and HERMAN), 1908, A., i, 596; 1909, A., i, 632.
- $\alpha\beta$ -Dialkylmalic esters**, new synthesis of (RASSOW and BAUER), 1908, A., i, 316; 1909, A., i, 631.
- Dialkylmalonic acids**, esters (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 902.
- Dialkylmalonamides** (MEYER), 1906, A., i, 137; (BÖTTCHER), 1906, A., i, 340, 405.
- Dialkylmalonic acids** (MEYER), 1906, A., i, 138; (BÖTTCHER), 1906, A., i, 340.
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- Dialkylmalonylcarbamides**. See 5:5-Dialkylbarbituric acids.
- Dialkylmalonylguanidines**. 4 See 5:5-Dialkylbarbituric acids, imino-.
- Dialkylmalonyl-*p*-phenetidines**, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 497.
- NN' -Dialkylmethylenedaryldiamines**, preparation of, and their homologues (FRÖHLICH), 1907, A., i, 346.
- Dialkylloxalacetic esters**, new synthesis of (RASSOW and BAUER), 1908, A., i, 316.
- 2:6-Dialkylxyphenols**, preparation of carbamates of (BASLER CHEMISCHE FABRIK), 1908, A., i, 635.
- 1:5-Dialkylcyclopentan-2-one-1-carboxylic acids**, esters (DESFONTAINES), 1904, A., i, 288.
- Dialkylphthalides**, preparation of (BAUER), 1904, A., i, 417; 1908, A., i, 274.
- $\beta\beta$ -Dialkylpropionic acids**, preparation of derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 259.
- 5:5-Dialkylpyrimidines**, 4:6-diimino-2-cyanoimino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 361.
- 2:4-Dialkylsemicarbazides** and their intramolecular transformations (BUSCH and FREY), 1903, A., i, 537.
- 5:5-Dialkylthiobarbituric acids**, preparation of (MERCK), 1911, A., i, 1032.
- Dialkylthiocarbamates**, phosphorescence and autoxidation of (BILLETTER), 1910, A., i, 544.
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- Diallyl**, action of diazomethane on (AZZARELLO), 1905, A., i, 867.
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- Diallylacetoacetic acid**, $\gamma\gamma$ -dibromo-, ethyl ester (GARDNER and PERKIN), 1907, T., 854; P., 116.
- Diallyl- α -allylethylcarbinol** and its hexabromide (REFORMATSKY), 1909, A., i, 4.
- Diallyl- α -allylpropylcarbinol** and its tetrabromide (REFORMATSKY), 1909, A., i, 4.
- Diallyl- α -allylisopropylcarbinol** and its pentabromide (REFORMATSKY), 1909, A., i, 4.
- Diallylaminosuccinic acid** and its salts and nitroso- (FRANKLAND and SMITH), 1912, T., 1725; P., 224.
- 5:5-Diallylbarbituric acid** (5:5-diallylmalonylcarbamide) (JOHNSON and HILL), 1912, A., i, 135.
- γ -Diallylbutyric acid** and its salts and γ -hydroxy-, and its salts, and γ -iodo- (KASANSKY), 1904, A., i, 367; 1905, A., i, 320.
- γ -Diallylbutyrolactone** and its tri- and tetra-bromides (KASANSKY), 1904, A., i, 367; 1905, A., i, 320.
- Diallylconitinium iodides**, isomeric (SCHOLTZ), 1905, A., i, 297.
- Diallylcrotonylcarbinol** and its tetra- and hexa-bromides (REFORMATSKY), 1909, A., i, 4.
- Diallylethylenediparabanic acid** (NÄGELE), 1912, A., i, 796.
- Diallylethylenedithiodiparabanic acid** (NÄGELE), 1912, A., i, 796.
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- 5:5-Diallylmalonylguanidine** (JOHNSON and HILL), 1912, A., i, 135.
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- Dialuric acid** and its acetyl and benzoyl derivatives (BEHREND and FRIEDRICH), 1906, A., i, 311.
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- m*-Diamines**, nitro-, azo-dyes from (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 251.
- p*-Diamines**, aromatic, azimino-compounds from (MORGAN and MICKLETHWAIT), 1906, A., i, 911.
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- "Diamine-gold"** (MEYER and MAIER), 1903, A., i, 870.
- Diamino-acids** from egg-albumin (HUGO-UNENQ and GALIMARD), 1906, A., i, 776.
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- Diaminoalkyl esters**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 936.
- Diaminodicarboxylic acids**, synthesis of (SÖRENSEN and ANDERSEN), 1908, A., i, 649.
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β -Diamylaminoethyl benzoate and its hydrochloride and oxalate (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 167.

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- 1:4-Dianilinoanthraquinone** (ULLMANN and BILLIG), 1911, A., i, 490.
- 1:5-Dianilinoanthraquinone**, and di-*p*-hydroxy- and di-*p*-nitro- (KAUFLER), 1903, A., i, 427.
- 4:9-Dianilinoanthraquinone**, 2:7-di-bromo-1:6-diamino-, and its sulphonic acid, and -1:6-bisdiazoaminobenzene (SCHOLL and KRIEGER), 1905, A., i, 145.
- 2:4-Dianilinobenzenesulphonic acid**, 5-amino- and 5-nitro- (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 337, 973.
- 1:2-Dianilinobenziminazole**, 5-amino- (5-amino-1-*p*-aminophenyl-2-*p*-aminophenylbenziminazole) (KYM), 1904, A., i, 454.
- 4:4'-Dianilinobenzophenone**, amino- and nitro-derivatives (CONSONNO), 1904, A., i, 676.
- Dianilino-*o*-benzoquinone**, dichloro-, and its aniline and alcohol compounds (JACKSON and MACLAURIN), 1906, A., i, 97.
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- 3:6-Dianilino-*p*-benzoquinone-3-acetic acid** (MÖRNER), 1911, A., i, 57.
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- Dianilinodibromo-*o*-benzoquinone** and its additive compounds (JACKSON and PORTER), 1903, A., i, 102.
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- Dianilinodibenzyl** and its diacetyl and dibenzoyl derivatives (ANSELMINO), 1908, A., i, 259.
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- Dianilinodimethylethylcarbinol** (FARBENFABRIKEN VORM. F. BAYER & CO.), 1906, A., i, 936.
- p-p*-Dianilindiphenylmethane (STRAUS and BORMANN), 1910, A., i, 282.
- 4:4'-Dianilinodiphenylsulphone**, 3:3'-diamino- and nitro-derivatives (ULLMANN and KORSALT), 1907, A., i, 306.
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- ω -Dianilino-2:4:6:8-tetrahydroxy-3:7-dimethylanthraquinone, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 1085.
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- 7:10-Dianilino-1:6-dihydroxynaphthacenequinone**, 8:9-dichloro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 288.
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- 2:6-Dianilino-4-methyl-5-ethylpyrimidine** (BYK), 1903, A., i, 658.
- Dianilino-*o*-nitrophenylacetic acid**, ethyl ester, and its compound with benzene (JACKSON and SMITH), 1904, A., i, 802.
- $\alpha\gamma$ -Dianilino- β -nitropropane and its acetyl derivatives (DUDEN, BOCK, and REID), 1905, A., i, 569.
- $\alpha\theta$ -Dianilino-octane and its picrate and nitroso- and benzoyl derivatives (v. BRAUN and TRÜMLER), 1910, A., i, 26.
- Dianilinophenol-blue** (HELLER), 1912, A., i, 918.
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- 3:6-Dianilino-9-phenylxanthenyl chloride** (POPE and HOWARD), 1911, T., 552.
- $\alpha\delta$ -Dianilinophthalic acid and its barium and silver salts (KUHARA and KOMATSU), 1909, A., i, 484.

- 2:4-Dianilinopyrimidine**, 6-amino- (JOHNSON and JOHNS), 1905, A., i, 837.
- 2:6-Dianilinopyrimidine** and its hydrochloride (WHEELER and BRISTOL), 1905, A., i, 485.
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- 5:8-Dianilinoquinizarin** (FREY), 1912, A., i, 477.
- $\alpha\theta$ -Dianilinosebacic acid** and its methyl and ethyl esters (LE SUEUR and HAAS), 1910, T., 180.
- Dianilinostilbene**, *di-m*-chloro-, mono- and di-benzoyl derivatives, and their salts (BAILEY and MCCOMBIE), 1912, T., 2273; P., 266.
- Dianilinetraphenyl-*p*-xylene** (ULLMANN and SCHLAEPFER), 1904, A., i, 570.
- 3:5-Dianilinetoluene**, 2:4-*di*- and 2:4:6-*tri*-nitro- (BLANKSMA), 1904, A., i, 566.
- Dianiloindophenol**, and *di-p*-amino-, acetyl derivative (HELLER), 1912, A., i, 916.
- Dianildithiobiuret** (FROMM and BAUMHAUER), 1908, A., i, 702.
- Dianisylacetic acid** (BOUGAULT), 1909, A., i, 487.
- Dianisidine**, compound of quinol and (DOLLINGER), 1910, A., i, 701.
- acetyl derivative (CAIN and MAY), 1910, T., 723.
- diazonium salt, action of heat on (CAIN), 1903, T., 692; P., 136.
- Dianisidine**, *o*-thio-, and its hydrochloride, and diacetyl derivative (BRAND), 1909, A., i, 855.
- Di-*o*-anisidine-6:6'-disulphonic acid** and its sodium salt, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 837.
- Di-*p*-anisidinoacetic acid**, and its hydrochloride (HELLER and ASCHKENASI), 1910, A., i, 738.
- Dianisylphenylhydroxylamine** (CIAMICIAN and SILBER), 1906, A., i, 11.
- Di-*p*-anisyl sulphoxide** (KNOEVENAGEL and KENNER), 1908, A., i, 971.
- Di-*p*-anisylamine** and its nitrosamine (WIELAND), 1908, A., i, 1016, 1026.
- bromide, and *di*bromo- and its dibromide, *tri*bromo-, and *tetra*bromo- (WIELAND and WECKER), 1910, A., i, 243.
- ω -Dianisylaminotriphenylmethane** (WIELAND and LECHER), 1912, A., i, 907.
- Di-*o*- and -*p*-anisylanthracene** (HALLER and COMTESSE), 1910, A., i, 493.
- $\alpha\gamma$ -Dianisylbutyric acid**, β -iodo- γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 538.
- Di-*p*-anisylidiacetylene** (MANCHOT, WITHERS, and OLTROGGE), 1912, A., i, 231.
- Dianisylidihydrazone-oxalacetic acid**, ethyl ester (RABISCHONG), 1903, A., i, 56.
- 9:10-Di-*p*-anisylidihydroanthracene**, 9:10-*di*hydroxy-, and its diethyl ether (HALLER and COMTESSE), 1910, A., i, 493.
- 9:10-Di-*o*-anisylidihydroanthraquinone**, 9:10-*di*hydroxy- (HALLER and COMTESSE), 1910, A., i, 493.
- Dianisylidiphenyltetrazoline** (BAMBERGER and PEMSEL), 1903, A., i, 284, 286.
- $\alpha\beta$ -Dianisylfulgenic acid** (STOBBE and BENARY), 1911, A., i, 377.
- $\alpha\delta$ -Dianisylfulgide** (STOBBE and BENARY), 1911, A., i, 377.
- $\alpha\gamma$ -Di-*p*-anisylguanidine**, and its β -benzoyl derivative (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Dianisylhydrazine** and its hydrochloride (WIELAND), 1908, A., i, 1026.
- Dianisylidene**, *di*- and *tri*-sulphides, dihydroxides (BUGGE and BLOCH), 1911, A., i, 61.
- Dianisylideneacetone**. See Dimethoxy-distyryl ketone.
- Dianisylidenedi-*p*-methoxydianino-stilbene** (FISCHER and PRAUSE), 1908, A., i, 220.
- Dianisylidenedimethylethylenedihydrazine** (BACKER), 1912, A., i, 731.
- Dianisylidene-3-methylcyclohexanone**, rotation of (HALLER), 1903, A., i, 564.
- Dianisylidenepentaerythritol** (READ), 1912, T., 2092.
- Dianisylidenephenoxyacetone** (STOERMER and WEHLN), 1903, A., i, 41.
- $\alpha\gamma$ -Dianisylidenepropane**, $\beta\beta$ -*di*chloro- (STAUDINGER), 1909, A., i, 906.
- derivatives of (STRAUS, LUTZ, and HÜSSY), 1910, A., i, 564.
- Dianisylindene**, α -hydroxy- (THIELE and BÜHNER), 1906, A., i, 570.
- Di-*o*- and -*p*-anisyl- β -methylantracene** (HALLER and COMTESSE), 1910, A., i, 493.
- 9:10-Di-*o*- and -*p*-anisyl-2-methyldihydroanthracene**, 9:10-*di*hydroxy- (HALLER and COMTESSE), 1910, A., i, 493.
- 3-Dianisyl-2-methyl-4-quinazolone**, 4'-amino-, and 4'-amino-7-acetylamino- (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.

- de-Dianisyllocta- $\beta\eta$ -dione** and its phenylhydrazone (HARRIES and GOLLNITZ), 1904, A., i, 427.
- Di-*o*- and -*p*-anisylloxalimino-chloride** (BAUER), 1909, A., i, 467.
- 2:5-Di-*p*-anisylpyrazine** (RIMINI), 1905, A., i, 198.
- Dianisylthiocarbamide** (v. BRAUN and DEUTSCH), 1912, A., i, 694.
- o*-Dianisylthiodicyanodiamine** and its derivatives (KLUT), 1904, A., i, 114.
- Dianthracene** (*paranthracene*) (LUTHER and WEIGERT), 1904, A., ii, 463; 1905, A., ii, 785.
- 1:2:1':2'-Dianthraceneacridine** (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- 1:2:1':2'-Dianthracenexanthen** (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- 1:1'-Dianthracylmethane**, 2:2'-*di*-hydroxy-, and its diacetyl derivative (ÜLLMANN and ÜRMÉNYI), 1912, A., i, 716.
- Di-1-anthramine** (DIENEL), 1905, A., i, 768.
- Dianthranilide** and its derivatives (SCHROETER and EISLEB), 1909, A., i, 577.
- s-Dianthranilides** with a negative substituent attached to the nitrogen, preparation of (SCHROETER and EISLEB), 1909, A., i, 575.
- Dianthranoylanthranilic acid** (MEYER), 1907, A., i, 317.
- Dianthranol** (KINZLBERGER & Co.), 1910, A., i, 752.
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- Dianthraquinone** (*bianthrone*) (MEYER), 1909, A., i, 168.
- $\alpha\beta$ -Dianthraquinone oxide**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 271.
- 1:2:1':2'-Dianthraquinoneacridine** (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- Dianthraquinonexanthen** (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- 1:2:1':2'-Dianthraquinonexanthone** (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- Dianthraquinonyl**, *dibromodiamino*- (ULLMANN), 1912, A., i, 996.
- Dianthraquinonyl sulphides**, *di*-1-amino- (LENHARD), 1912, A., i, 997.
- 1:1'-Dianthraquinonyl**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 271.
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- 1:1'-Dianthraquinonyl**, 2:2'-*di*hydroxy- (BENESCH), 1911, A., i, 794.
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- 2:2'-Dianthraquinonyl**, and *diamino*-, and *dinitro*- (SCHOLL and NEOVIUS), 1911, A., i, 453.
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- Dianthraquinonylamine** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 226.
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- Dianthraquinonylamine**, thio- (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 1013.
- Dianthraquinonylamines**, *o*-amino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 198.
- 2':2'-Dianthraquinonyl-1:5-diamino-anthraquinone**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 1085.
- Dianthraquinonyldiaminoanthraquinones**, complex, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1908, A., i, 807.
- 2:2'-Dianthraquinonylcarbamide** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 655.
- Dianthraquinonylcarbamides**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 119.
- 1:1'-Dianthraquinonyl-2:2'-dialdehyde**, and 4:4'- and 6:6'-*dichloro*- (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 362.

- 1:1'-Dianthraquinonyl-2:2'-dicarboxylic acid** and its amide (SCHOLL, HOLDER-MANN, KUNZ, and MANSFELD), 1907, A., i, 540.
- 1:1'-Dianthraquinonylmethane**, 2:2'-dihydroxy- (ULLMANN and ÜRMÉNYI), 1912, A., i, 717.
- Dianthraquinonylphenylenediamine**. See Phenylenebisaminoanthraquinone.
- s-Dianthraquinonylthiocarbamide** (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 886.
- Dianthraquinonylthiodiphenylamine**, bromo-, preparation of (I. and F. ULLMANN), 1912, A., i, 389.
- 1:1'-Dianthrimide**, hydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 996.
- Dianthryl**, diamino-, and its additive salts (KAUFLEDER and SUCHANNEK), 1907, A., i, 225.
- Diisoantipyrine-ethylene- and diethylene-diamines** (MICHAELIS and WREDE), 1907, A., i, 251.
- Diantipryl and Diisoantipryl-amines** (MICHAELIS and WREDE), 1907, A., i, 252.
- Diantipryl-mono- and -di-ethylenediamines** and their additive salts (LUFT), 1906, A., i, 118.
- s-Diisoantiprylthiocarbamide** (MICHAELIS and WREDE), 1907, A., i, 251.
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- Diisocapole** (SZÉKI), 1906, A., i, 660.
- Diaquohexaformatodioltriferriic formic acid**, iron salts (BELLONI), 1909, A., i, 283.
- Diabinose benzidide** (ADLER), 1909, A., i, 517.
- αγ-Diarachin**, synthesis of (GRÜN), 1905, A., i, 562.
- Diarrhœa**, epidemic (SANDILANDS), 1906, A., ii, 109.
- Diaryl ketones**, metallic compounds of (SCHLENK and WEICKEL), 1911, A., i, 545.
- Diaryl sulphides**, preparation of (MAUTHNER), 1906, A., i, 421, 948.
- Diaryl amines**, preparation of (KNOLL & Co.), 1912, A., i, 345, 960.
- Diarylethylenediamines**, di-α-bromo-isovaleryl derivatives, reactions of (BISCHOFF), 1905, A., i, 157.
- N:N'-Diarylmethylenediamines**, decomposition of (BISCHOFF and FRÖHLICH), 1907, A., i, 28.
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- m-Diarylsulphondiamides**, nitration of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 701.
- Diasarone** (SZÉKI), 1906, A., i, 660.
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ψ -**Diazoacetamide** and its reactions (CURTIUS, DARAPSKY, and MÜLLER), 1906, A., i, 939.

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- Diazoacetic acid**, ethyl ester, reaction of, with *p*-xylene (BUCHNER and SCHULZE), 1911, A., i, 50.
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- iso***Diazoacetic acid**, ethyl ester, so-called (CURTIUS, DARAPSKY, and MÜLLER), 1908, A., i, 923.
- ψ **Diazoacetic acid** and its salts (MÜLLER), 1908, A., i, 922.
- Diazoacetoacetic acid**, ethyl ester, anhydride of (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 203.
- Diazoacetone** and its cyanide (WOLFF and GREULICH), 1912, A., i, 1029.
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- Diazoacetylaminacetic acid**, ethyl ester (CURTIUS and DARAPSKY), 1906, A., i, 403.
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- Diazoacetyldiglycylaminacetic acid**, ethyl ester, and amide (CURTIUS), 1904, A., i, 477.
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- iso***Diazoacetylglycineamide** and its acyl derivatives and salts (CURTIUS and THOMPSON), 1906, A., i, 404, 940.
- Diazoacetylglycinehydrazide**, and its derivatives (CURTIUS and WELDE), 1910, A., i, 787.
- Diazoacetylgllyglycine**, ethyl ester (CURTIUS and THOMPSON), 1906, A., i, 403.
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- Diazoacetylgllyglycinehydrazide** and its benzylidene derivative (CURTIUS and CALLAN), 1910, A., i, 788.
- Diazoalizarin hydroxides and sulphates**, α - and β - (SCHULTZ and ERBER), 1906, A., i, 968.
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- Diazoaminobenzene**, isomeric (ORLOFF), 1907, A., i, 365.
- Diazoaminobenzene**, *p*-amino-, and its *N*-acetyl derivative (WILLSTÄTTER and BENZ), 1906, A., i, 997.
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- o*-**Diazoaminobenzoic acid** (v. NIEMENTOWSKI), 1903, A., i, 133.
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- 2:2'-Diazoamino-*o*-toluene** and its 4:4'-disulphonic acid and 5:5'-*di*nitro- (MEUNIER), 1904, A., i, 637.
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- 4-Diazoanisole-2-sulphonic acid** (BAUER), 1909, A., i, 470.
- 4-Diazoanthraquinone**, 1-hydroxy-, and its sulphate (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 323.
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- Diazobenzene-3-sulphonic anhydride**, 2:5:6-*tri*chloro-, and its compound with β -naphthol (NOELTING and BATTEGAY), 1906, A., i, 221.
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- iso***Diazobenzene** salts, preparation of (STOLLÉ), 1908, A., i, 917; (THIELE), 1908, A., i, 927.
- Diazobenzoylacetic acid**, ethyl ester, anhydride of (WOLFF and HALL), 1904, A., i, 120.
- Diazobenzoylacetone**, anhydride of (WOLFF, BOCK, LORENTZ, and TRAPPE), 1903, A., i, 204.
- 4-*p*-Diazobenzylhydantoin** ethylxanthate (JOHNSON and BRAUTLECHT), 1912, A., i, 805.
- Diazo-compound**, $C_{10}H_8O_5N_4$, from *p*-nitrophenylazoisimide and methyl sodiomalonate (DIMROTH, AICKELIN, BRAHN, FESTER, and MERCKLE), 1910, A., i, 520.
- $C_{16}H_{14}O_5N_2$, from α -phenyl-2-amino-3-hydroxy-4-methoxycinnamic acid (PSCHORR and VOGTHER), 1903, A., i, 184.
- Diazo-compounds** (HANTZSCH and WECHSLER), 1903, A., i, 210; (ZINCKE), 1905, A., i, 486.
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- p-Diazoiminobenzene**, derivatives of (MORGAN and MICKLETHWAIT), 1908, T., 602; P., 48.
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- 1-Diazonaphthalene-4-sulphonic acid**, 2-hydroxy-, nitration of (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1906, A., i, 545.
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- Diazonium salts**, action of sodium hypsulphite on (GRANDMOUGIN), 1907, A., i, 263, 362.
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- 1-Diazo-2-oxynaphthalene-4-sulphonic acid**, chloro- (KALLE & Co.), 1912, A., i, 814.
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- 1-Diazo-2-oxynaphthalenesulphonic acids** and their salts and anhydrides (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1906, A., i, 907.
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- 6-Diazophenol-4-sulphonic acid**, 2-nitro- (BADISCHE ANILIN- and SODA-FABRIK), 1903, A., i, 665.
- Diazophenylarsinic acid** and its products of decomposition (BERTHEIM), 1908, A., i, 591.
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- 4-Diazo-1-phenyl-5-methyl-3-pyrazolone chloride** and its compounds with β -naphthol, resorcinol, salicylic acid, and amines (MICHAELIS and KOTELMANN), 1907, A., i, 155.
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- Diazosulphonaphtholsulphonic acids**, so-called, of the German patent 121226 (BUCHERER), 1904, A., i, 536.
- Diazotetrahydronaphthalene-4-sulphonic acid** (MORGAN, MICKLETHWAIT, and WINFIELD), 1904, T., 755.
- Diazotetrazolebenzylideneaminoguanidine** and its sodium salt (HOFMANN and HOCK), 1911, A., i, 1048.
- Diazotetrazolephenylhydrazide** and its sodium derivative (HOFMANN and HOCK), 1911, A., i, 1048.
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- 4-Diazo-1-p-tolyl-5-methyl-3-pyrazolone** chloride and its compounds with β -naphthol, resorcinol, salicylic acid, and dimethylaniline (MICHAELIS and KOTELMANN), 1907, A., i, 156.
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- 4-Diazo-m-xylene-5-sulphonic acid**, and 6-nitro- and their reactions with alcohols (JUNGHAHN), 1903, A., i, 22.
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- Dibarbituryl-alkylamines and -carbamide** (MÖHLAU and LITTER), 1906, A., i, 612.
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- Dibenzaldazine**, *di-o*-hydroxy-, disodium salt (CURTIUS and GLASER), 1912, A., i, 506.
- Dibenzaldehyde o-disulphide** (FRIEDLÄNDER and LENK), 1912, A., i, 702.
- Dibenzaldehyde**, *di-m*-hydroxy-, and *di-o*-, *m*-, and *p*-nitro-, compounds of, with tin tetrahaloids (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.
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- Dibenzamide**, action of phosphorus pentachloride on (TITHERLEY and WORRALL), 1910, T., 839; P., 93.
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- 1:5-Dibenzenesulphonyldiaminoanthraquinone** (ULLMANN), 1910, A., i, 751.
- s-Dibenzenesulphonyldiaminomesitylene** (MORGAN and MICKLETHWAIT), 1906, T., 1299.

- Dibenzenesulphonyl-1:4:8-triamino-naphthalene** (SACHS), 1909, A., i, 433.
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- Dibenzenesulphonyl- ψ -cumidine, -ethylamide, and -*o*- and -*p*-xylydides** (HINSBERG and KESSLER), 1905, A., i, 339.
- Dibenzenesulphonyldiethyl-*m*-phenylenediamine** (HINSBERG and KESSLER), 1905, A., i, 723.
- Dibenzenesulphonylhydroxamic acid** (ANGELI, ANGELICO, and SCURTI), 1904, A., i, 311; (HAGA), 1908, A., i, 870.
- o*-dicyano- (WALKER and SMITH), 1906, T., 352; P., 62.
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- Dibenzenyldiazoxime** and *di-m*-nitro- (MINUNNI and CIUSA), 1906, A., i, 187; (PONZIO and BUSTI), 1906, A., i, 855.
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- Dibenzenyloxazoxime** and its dihydrochloride (WIELAND and BAUER), 1906, A., i, 412; 1907, A., i, 527.
- Dibenzhydroxamic acid** (MARQUIS), 1905, A., i, 524.
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- Dibenzhydramine** and its hydrochloride (MAILHE and MURAT), 1911, A., i, 535.
- o*-**Dibenzhydrylbenzene** (GUYOT and CATEL), 1905, A., i, 541; 1907, A., i, 76.
- 5:5'-Dibenzhydryl-2:2'-bis-1:3:4-oxadiazole** and *di- ω* -chloro-, and *di- ω* -hydroxy- (STOLLÉ and SCHMIDT), 1912, A., i, 1037.
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- 3:6-Dibenzhydryl-1:2:4:5-tetrazine** (STOLLÉ and LAUX), 1911, A., i, 509.
- 3:6-Dibenzhydryl-1:2:4:5-tetrazine**, *di- ω* -bromo-, and *di- ω* -chloro- (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- Dibenzhydrylthiocarbamide** (V. BRAUN and DEUTSCH), 1912, A., i, 694.
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- oo'*-**Dibenzil** and its condensation with *o*-phenylenediamine (ZINCKE and TROPP), 1909, A., i, 36.
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- 3:5-Dibenzo- $\Delta^{3:5}$ -cycloheptadiene**, 1-imino-2-cyano- (KENNER and TURNER), 1911, T., 2110; P., 263.
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- 3:5-Dibenzo- $\Delta^{3:5}$ -cycloheptadiene-2-carboxylic acid**, 1-imino- (KENNER and TURNER), 1911, T., 2111; P., 263.
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- Dibenzospiropyran** (DECKER and FELSER), 1908, A., i, 906.
- Dibenzopyronium derivatives** (DECKER and FELSER), 1908, A., i, 1003.
- s*-**Dibenzothiazylethane** (REISSERT and MORÉ), 1906, A., i, 827.
- Dibenzoyl**. See Benzil.
- Dibenzoyl-**. See also under the parent Substance.
- s*-**Dibenzoylacetonedicarboxylic acid** and its diethyl ester (HALE), 1911, A., i, 722.
- Dibenzoylacetylhydrazide** (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
- Dibenzoylacetylmethane**, constitution of (MICHAEL and MURPHY), 1906, A., i, 180.
- γ -**Dibenzoylacetylmethane** (MICHAEL), 1912, A., i, 632.
- o*-**Dibenzoylbenzene** and its diphenylhydrazone and phthalazine (GUYOT and CATEL), 1905, A., i, 226, 540.

- o*-Dibenzoylbenzene, amino-derivatives of (GUYOT and PIGNET), 1903, A., i, 569.
- m*-Dibenzoylbenzene, 4-amino-, *N*-acetyl and -benzoyl derivatives (CHATTAWAY and LEWIS), 1904, T., 1663; P., 223.
- Dibenzoylbenzenes (GUYOT and HALLER), 1910, A., i, 285.
- Dibenzoylbenzidine (BIEHRINGER and BUSCH), 1903, A., i, 296.
- $\alpha\delta$ -Dibenzoylbutane, action of sodamide on (BAUER), 1912, A., i, 777.
- Dibenzoylbutylenediamine (WINDAUS), 1909, A., i, 258.
- Dibenzoylcaffeic acid. See Dibenzoyl-oxyinnamic acid.
- Dibenzoylcarbamide (HELLER), 1907, A., i, 261.
- Dibenzoylcarbamide, *s-di-p*-bromo- (BILTZ and RIMPEL), 1908, A., i, 574.
- as-di-o*-nitro- (DIELS and WAGNER), 1912, A., i, 512.
- Dibenzoylchloroimide (CHATTAWAY), 1904, P., 22.
- Dibenzoyldiacetylhydrazide (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
- Dibenzoyldianilinostilbene and its methiodide (EVEREST and MCCOMBIE), 1911, T., 1758; P., 218.
- Dibenzoyldiazomethane (WIELAND and BLOCH), 1904, A., i, 656.
- Dibenzoyldiethylcarbamide (BILTZ and KOSEGARTEN), 1909, A., i, 744.
- Dibenzoyl-*N*-dihydroanthraquinone-azine (SCHOLL and EDLBACHER), 1911, A., i, 756.
- 3:5-Dibenzoyl-1:4-dihydrocollidine. See 3:5-Dibenzoyl-2:4:6-trimethyl-1:4-dihydropyridine.
- Dibenzoyl-dimethyl- and -diethyl-4:4'-diaminodiazaminobenzene (MORGAN and ALCOCK), 1909, T., 1326.
- Dibenzoyl-*p*-dimethylaminophenylhydrazide (STOLLÉ), 1912, A., i, 920.
- Dibenzoyldimethylcarbamide (BILTZ and RIMPEL), 1908, A., i, 464.
- $\beta\zeta$ -Dibenzoyl- $\beta\zeta$ -dimethylheptane (HALER and BAUER), 1911, A., i, 652.
- 3:6-Dibenzoyl-2:5-dimethylpyrazine and its dioxime (SONN), 1908, A., i, 56.
- Dibenzoyldioxynitrostyrene (ROSENMUND), 1912, A., i, 843.
- 2:2'-Dibenzoyldiphenyl (WERNER and GROB), 1904, A., i, 865.
- 4:4'-Dibenzoyldiphenyl (ULLMANN), 1904, A., i, 728.
- $\alpha\delta$ -Dibenzoyl- $\beta\gamma$ -diphenylbutane (BENRATH), 1906, A., i, 535.
- s*-Dibenzoyldiphenylcarbamide (BILTZ and KOSEGARTEN), 1909, A., i, 743.
- Dibenzoyldiphenyldihydrazine (PONZIO), 1909, A., i, 681.
- $\alpha\delta$ -Dibenzoyl- $\beta\gamma$ -diphenylenebutadiene- $\alpha\delta$ -dicarboxylic acid (*diphenylenedibenzoylmuconic acid*), ethyl ester (JAPP and WOOD), 1904, P., 221.
- 1':1''-Dibenzoyldiphenyl-1:4-phenylenediamine, 3':5':3'':5''-tetranitro- (ULLMANN and BROIDO), 1906, A., i, 190.
- Dibenzoyldiisopropylamine and its additive salts (ISSOGLIO), 1906, A., i, 862.
- 3:4:5:6-Dibenzoylenebenzoic acid and its salts and ethyl ester (MAROTTA), 1911, A., i, 980.
- 2:3:5:6-Dibenzoylene-1-phenylbenzene-2'-carboxylic acid, and its methyl ester, nitro-derivative and sodium salt (ERRERA and VACCARINO), 1909, A., i, 163.
- 3:4:5:6-Dibenzoylene-1-phenylbenzene-2'-carboxylic acid and its esters (ERRERA), 1908, A., i, 185; (ERRERA and VACCARINO), 1909, A., i, 164.
- Dibenzoylethane-2:2'-dicarboxylic acid and *di*bromo-, and its anhydride and its dianil (REISSERT and ENGEL), 1905, A., i, 898.
- Dibenzoylethylazaurolic acid (WIELAND), 1907, A., i, 495.
- Dibenzoylethylene, refraction of (SMEDLEY), 1909, T., 219; P., 17.
- Dibenzoylethylhydroxyazaurolic acid (WIELAND), 1907, A., i, 496.
- 3:4-Dibenzoylfurazan, 2:3-dichloro- (BÖESEKEN and BASTET), 1912, A., i, 724.
- Dibenzoylfuroxan, action of amines of (WIELAND and GMELIN), 1910, A., i, 784.
- Dibenzoylgyloxime peroxide, constitution of (BÖESEKEN and BASTET), 1912, A., i, 724.
- Dibenzoylhydrazide. See Dibenzylidenehydrazine.
- s*-Dibenzoylhydrazine (HELLER), 1907, A., i, 261; (CURTISS, KOCH, and BARTELLS), 1909, A., i, 213.
- and its crystallographic properties (MOHR), 1904, A., i, 1058, 1059.
- metallic and acetyl derivatives, acetic and carboxylic acids, ethyl esters, and ethyl and *n*-propyl derivatives (STOLLÉ and BENRATH), 1904, A., i, 935.
- mercury salt (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 225.
- s*-Dibenzoylhydrazine, isomeric *di*bromo-, and their conversion into oxadiazole and thiodiazole derivatives (STOLLÉ and JOHANNISSIEN), 1904, A., i, 694.

- s*-Dibenzoylhydrazine, *di-m*-chloro-, conversion of, into diazole derivatives (STOLLÉ and FOERSTER), 1904, A., i, 627.
- Dibenzoylhydrazodicarboxylic acid, ethyl ester (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 228.
- Dibenzoyliodomethane (ABELL), 1912, T., 997; P., 145.
- 2:6-Dibenzoyl-4-ketopenthiophendithiophen, 3:5-dihydroxy- (APITZSCH and KELBER), 1910, A., i, 410.
- Dibenzoylmatairesinol (EASTERFIELD and BEK), 1910, T., 1030.
- Dibenzoylmethane, formation of, from α -benzoxy- α -phenylethylene, and its *O*-benzoyl derivative (CLAISEN and HAASE), 1904, A., i, 67.
- Wislicenus's supposed isomeride of (SLUITER), 1905, A., i, 796.
- the tautomeric forms of (ABELL), 1912, T., 998; P., 145.
- diazotisation of (WIELAND and BLOCH), 1906, A., i, 466.
- ethyl ether of (RUHEMANN and WATSON), 1904, T., 457; P., 48.
- compound of, with silicon chloride and its double salts (DILTHEY), 1903, A., i, 592.
- compounds of, with silicon salts (DILTHEY), 1904, A., i, 132.
- Dibenzoylmethane, *p*-nitro- (WIELAND), 1904, A., i, 432.
- ethyl ether of (RUHEMANN and WATSON), 1904, T., 457; P., 48.
- Dibenzoylmethane-*m*-hydroxyanilide (BÜLOW and ISSLER), 1904, A., i, 191.
- p*-Dibenzoylmethaneoxime, ω -dinitro-, and its acetyl derivative (WIELAND), 1903, A., i, 767.
- $\alpha\beta$ -Dibenzoyl- α -methoxydibenzyl and its reactions (IRVINE and McNICOLL), 1908, T., 956; P., 119.
- $\alpha\beta$ -Dibenzoyl- ψ -methyl- and -ethylthiocarbamides, conversion of, into the *s*-compounds (JOHNSON and JAMIESON), 1906, A., i, 351.
- Dibenzoylmorpholquinone (PSCHORR, JAECKEL, and FECHT), 1903, A., i, 194.
- 1:8-Dibenzoylnaphthalene (BESCHKE and KITAJI), 1909, A., i, 917.
- Dibenzoyl- β -naphthol sulphide and sulphoxide (HILDITCH and SMILES), 1911, T., 983.
- Dibenzoyl-*p*-nitroaniline (MUMM and HESSE), 1910, A., i, 311.
- 1:1'-Dibenzoyl-3:5:3':5'-tetranitrodiphenyl (ULLMANN and BROIDO), 1906, A., i, 189.
- s*-Dibenzoyloxamide (TITHERLEY), 1904, T., 1681; P., 188; (DIELS and STEIN), 1907, A., i, 528.
- op*-Dibenzoyloxyacetophenone, ω -amino-, benzoyl derivative (TUTIN), 1910, T., 2515.
- 2:4-Dibenzoyloxybenzhydrol (POPE and HOWARD), 1910, T., 80.
- Dibenzoyloxybenzylidenemalononic acid (HAYDUCK), 1903, A., i, 827.
- 3:4-Dibenzoyloxybenzoic acid (*dibenzoylcaffeic acid*), and its ethyl ether (HAYDUCK), 1903, A., i, 827.
- s*-Di- β -benzoyloxy-1:4-diethylpiperazine and its additive salts and physiological action (PYMAN), 1908, T., 1795; P., 208.
- $\beta\gamma$ -Dibenzoyloxydiethylpropylamine and its additive salts and physiological action (PYMAN), 1908, T., 1794; P., 208.
- $\beta\gamma$ -Dibenzoyloxydimethylpropylamine and its additive salts and physiological action (PYMAN), 1908, T., 1794; P., 208.
- Dibenzoyloxydiphenylmethane, decomposition of (MACKENZIE and JOSEPH), 1904, T., 792; P., 124.
- oo'*-Dibenzoyloxy-2:5-diphenylpyrazine (TUTIN), 1910, T., 2519.
- 4:4'-Dibenzoyloxy-3:3-ditolyl, 5:5'-*di*-bromo- (MOIR), 1911, P., 227.
- s - $\beta\beta$ -Dibenzoyloxymethyldiethylamine and its additive salts and physiological action (PYMAN), 1908, T., 1794; P., 208.
- α :4-Dibenzoyloxyphenylacetoneitrile (ALOY and RABAUT), 1912, A., i, 462.
- 5:6-Dibenzoyloxy-1-phenylbenzoxazole (EINHORN, COBLINER, and PFEIFFER), 1904, A., i, 240.
- 3:6-Dibenzoyloxy-9-phenylxanthen (POPE and HOWARD), 1910, T., 82.
- $\beta\gamma$ -Dibenzoyloxy-1-propylpiperidine and its additive salts and physiological action (PYMAN), 1908, T., 1794; P., 208.
- α :4-Dibenzoyloxy-*o*-tolylacetoneitrile (ALOY and RABAUT), 1912, A., i, 462.
- s - $\beta\beta$ -Dibenzoyloxytriethylamine and its additive salts and physiological action (PYMAN), 1908, T., 1794; P., 208.
- $\gamma\gamma$ -Dibenzoylpentane (FREUND and FLEISCHER), 1910, A., i, 490.
- Dibenzoylperylene (SCHOLL, SEER, and WEITZENBÖCK), 1910, A., i, 616.
- 9:10-Dibenzoylphenanthrene (WILLGERODT and ALBERT), 1911, A., i, 883.
- Dibenzoylphenylaminoguanidine (WHEELER and BEARDSLEY), 1903, A., i, 294.

- α -Dibenzoyl- β -phenylbutyric acid, ethyl ester (DIECKMANN and V. FISCHER), 1911, A., i, 452.
- α -Dibenzoyl- β -phenyl- α -dimethylpropane, preparation of (ABELL), 1903, T., 364; P., 17.
- Dibenzoylphenylethane (ABELL), 1912, T., 997; P., 145.
- Dibenzoylphenylethyl- ψ -semithiocarbazine (WHEELER and BEARDSLEY), 1903, A., i, 294.
- α -Dibenzoyl- β -phenyl- α -methylpropane and its dioxime, preparation of (ABELL), 1903, T., 362; P., 17.
- α -Dibenzoyl- β -phenylpropane and its dioxime, preparation of (ABELL), 1903, T., 364; P., 17.
- Dibenzoylphenyl-*p*-tolylaminoguanidine (WHEELER and BEARDSLEY), 1903, A., i, 294.
- C*-Dibenzoylphloroglucinol diethyl and dimethyl ethers and their potassium and sodium salts (FISCHER), 1910, A., i, 249.
- 4:6-Dibenzoylisophthalic acid (PHILIPPI), 1911, A., i, 793; (W. H. and M. MILLS), 1912, T., 2200; P., 242.
- Dibenzoylpiperidide, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 792.
- $\alpha\alpha$ -Dibenzoylpropane (SLUITER), 1905, A., i, 796.
- $\beta\beta$ -Dibenzoylpropane (SMEDLEY), 1910, T., 1492.
and its oxime (HALLER and BAUER), 1911, A., i, 726.
- β -Dibenzoylpropionic acid, ethyl ester (ABELL), 1912, T., 996; P., 145.
- γ -Dibenzoylpropionylmethane (MICHAEL and HIBBERT), 1912, A., i, 632.
- Dibenzoylprotocatechualdehyde (ROSENMUND), 1912, A., i, 843.
- Dibenzoylrhein (FISCHER and GROSS), 1911, A., i, 886.
- Dibenzoylsantalol (CAIN and SIMONSEN), 1912, T., 1067; P., 140.
- s*-Dibenzoylstilbenes, refraction of (SMEDLEY), 1909, T., 220; P., 17.
cis- and *trans*-, and the action of hydrazine on (JAPP and WOOD), 1905, T., 707; P., 154.
- cis*- $\alpha\beta$ -Dibenzoylstyrene, refraction of and action of isoamylamine on (SMEDLEY), 1909, T., 219; P., 17.
- $\alpha\beta$ -Dibenzoylstyrenes, *cis*- and *trans*-, and the action of hydrazine on (JAPP and WOOD), 1905, T., 707; P., 154.
- s*-Dibenzoylsuccinamide (TITHERLEY), 1904, T., 1681; P., 188.
- Dibenzoyltartaric acids, *di-o*-, *m*-, and *p*-bromo-, -chloro-, and -iodo-, methyl esters (FRANKLAND, CARTER, and ADAMS), 1912, T., 2470; P., 292.
o-, *m*-, and *p*-nitro-, methyl and ethyl esters, and their rotation (FRANKLAND and HARGER), 1904, T., 1571; P., 203.
- Dibenzoyltartramide (EINHORN), 1908, A., i, 611.
- 2:5-Dibenzoylterephthalic acid (PHILIPPI), 1911, A., i, 793.
and its sodium salt (W. H. and M. MILLS), 1912, T., 2199; P., 242.
- 3:5-Dibenzoyl-2:4:6-trimethyl-1:4-dihydropyridine (ISSOGGIO), 1906, A., i, 862.
- Dibenzyl. See *s*-Diphenylethane.
- Dibenzyl carbonate (BISCHOFF and v. HEDENSTRÖM), 1903, A., i, 26;
(BISCHOFF), 1903, A., i, 261.
cyanoiminodithiocarbonate and its reactions (FROMM and v. GÖNCZ), 1907, A., i, 873.
- diselenide (PRICE and JONES), 1908, P., 134.
- disulphide, preparation of (PRICE and TWISS), 1908, T., 1399.
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- sulphoxide, preparation of (GAZDAR and SMILES), 1908, T., 1835; P., 216.
- disulphoxide (FROMM and DE SEIXAS PALMA), 1906, A., i, 819.
- Dibenzylacetamide, cyano- (CONRAD and ZART), 1905, A., i, 754.
- Dibenzylacetic acid, methyl ester (DIECKMANN and KRON), 1908, A., i, 388.
- Dibenzylacetic acid, *di-p*-nitro-, and its ethyl ester (FICHTER and WORTSMANN), 1904, A., i, 592.
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- Dibenzylacetoacetic acid, *di-p*-nitro-, ethyl ester (ROMEO), 1903, A., i, 260.
- Dibenzylacetone, action of sulphuric acid monohydrate on (VORLÄNDER and SCHRÖDTER), 1903, A., i, 496.
- Dibenzylacetone, *tribromo*- (VORLÄNDER and SIEBERT), 1904, A., i, 901.
- Dibenzylacetones, *s*- and α -, *di-p*-nitro-, and their dicarboxylic acids, ethyl esters (FICHTER and WORTSMANN), 1904, A., i, 591.
- Dibenzylacetylacetone, *o*- and *p*-*di*-nitro- (MECH), 1907, A., i, 63.
- Dibenzylacetylcarbamide, cyano- (CONRAD and ZART), 1905, A., i, 754.

- Dibenzylamine** and *di-o*-chloro- (FRANZEN), 1905, A., i, 427.
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dibenzylthiocarbamate (HAASE and WOLFFENSTEIN), 1904, A., i, 856.
 ferrichloride (SCHOLTZ), 1910, A., i, 96.
- Dibenzylamine, di-m-chloro-**, and its salts and nitroso-derivative (CURTIUS and WEWER), 1912, A., i, 310.
- w*-**Dibenzylaminoacetophenone**, phenylhydrazones of (BUSCH and HEFELE), 1911, A., i, 584.
- 1:5-Dibenzylaminoanthraquinone**, and its dibenzoyl derivative, and *di-p*-chloro- (SEER and WEITZENBÖCK), 1910, A., i, 572.
- Dibenzylaminodiazobenzene** (VIGNON and SIMONET), 1905, A., i, 495.
- 2:8-Dibenzylamino-3:7-dimethylacridine** and its disulphonic acid (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 584.
- s*-**Dibenzyltetraaminoditolylmethane** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 584.
- Dibenzylaminophenols, o-** and *p*-, and their hydrochlorides (BAKUNIN), 1906, A., i, 496.
- 5-Dibenzylamino-1-phenyl-3-methylpyrazole** and its additive salts (MICHAELIS and BLUME), 1905, A., i, 479.
- $\alpha\beta$ -Dibenzylaminopropionic acid**, and its dihydrochloride (FRANKLAND), 1910, T., 1688; P., 202.
- Dibenzylaminosuccinic acid** and its salts (FRANKLAND), 1911, T., 1781; P., 206.
- Dibenzylammonium iridichloride** (GUTBIER and LINDNER), 1909, A., ii, 1026.
 nitrite (RAY and DATTA), 1911, T., 1477; P., 127.
- Dibenzylaniline, di-p-cyano-** (FISCHER and WOLTER), 1909, A., i, 639.
- Dibenzyl- β -o-anisylethylcarbinol** and its chloride (ORECHOFF and MEERSON), 1912, A., i, 621.
- Dibenzylanthracene** and hydroxy-, and its ethyl and acetyl derivatives (LIPPMANN and FRITSCH), 1904, A., i, 865.
- Dibenzylanthracene, dibromo-** and its derivatives and degradation (LIPPMANN and FRITSCH), 1907, A., i, 309.
- $\alpha\alpha$ -Dibenzyl-l-arabitol** (PAAL and KINSCHER), 1912, A., i, 31.
- Dibenzylaspartic acid**, optically active, synthesis of (LUTZ), 1908, A., i, 345.
- 5:5-Dibenzylbarbituric acid, 4-imino-** (CONRAD), 1905, A., i, 752.
- 1:3-Dibenzylbenzimidazole** and its salts and carbinol (FISCHER and VEIEL), 1905, A., i, 245.
- p*-**Dibenzylbenzoquinone, dihydroxy-**, and its diacetate (FICHTER and WEISS), 1908, A., i, 659.
- 1:1-Dibenzyl-3-benzylidenephthalan** (SHIBATA), 1909, T., 1455; P., 209.
- Dibenzylbutanetetraacetic acid, ethyl ester** (WOLFF), 1911, A., i, 690.
- Dibenzylcampholides**, isomeric, and their separation (HOUBEN and HAHN), 1908, A., i, 540.
- Dibenzylcarbamie acid**, phenyl, tolyl, and guaiacyl esters (BOUCHETAL DE LA ROCHE), 1904, A., i, 152.
- Dibenzylcarboxylic acids.** See Diphenylethanecarboxylic acids.
- Dibenzyleoniinium ferrichloride** (SCHOLTZ), 1910, A., i, 97.
- Dibenzylecyanamide** (TRAUBE and ENGELHARDT), 1911, A., i, 955.
- Dibenzylecyanoacetic acid, tetrabromodi-p-amino-**, and its amide (ROMEO and MARCHESE), 1905, A., i, 442.
di-p-nitro-, ethyl ester, and amide (ROMEO), 1903, A., i, 260.
- Dibenzylecyanoacetoinino-ether, di-p-nitro-** (ROMEO), 1903, A., i, 260.
- Dibenzylidicarboxylic acid.** See Diphenylethanedicarboxylic acid.
- Dibenzyl-diethylstannane** (SMITH and KIPPING), 1912, T., 2561; P., 314.
- Dibenzyl-diethylthioninedisulphonic acid** (GNEHM and SCHÖNHOLZER), 1908, A., i, 113.
- 9:10-Dibenzyl-dihydrophenanthrene, 9:10-dihydroxy-**, and its oxide (ZINCKE and TROPP), 1908, A., i, 787.
- Dibenzyl-dihydroretene, dihydroxy-** (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- Dibenzyl-dihydrotetrazine, di-p-amino-**, and its diazotisation (JUNGAHN and BUNIMOWICZ), 1903, A., i, 131.
- Dibenzyl-dimethyl-diaminodiphenylmethane** and its picrate (v. BRAUN and KAYSER), 1904, A., i, 688.
- Dibenzyl-dimethylammonium salts** (EMDE), 1909, A., i, 709.
 iodide (WIELAND and FRESSEL), 1912, A., i, 903.
- 5-Dibenzyl-dimethylethylenediamine** (CLARKE), 1911, T., 1935.
- 3-Dibenzyl-dimethylmethylenediamine** (MANNICH and KUPHAL), 1912, A., i, 218.
- 3:6-Dibenzyl-2:5-dimethylpyrazine** and its additive salts (SONN), 1908, A., i, 56.
- Dibenzyl-dimethylthioninedisulphonic acid** and its salts (GNEHM and SCHÖNHOLZER), 1908, A., i, 113.

- Dibenzylidinaphthylthiophen**, synthesis of (DZIEWONSKI and DOTTA), 1904, A., i, 803.
- 2:2'-Dibenzylidiphenyl**, 4:4'-diamino-, and its sulphate and hydrochloride (CARRÉ), 1909, A., i, 121.
- Dibenzyl-*p*-dithymolylamine** and its hydrochloride (SOLONINA), 1907, A., i, 839.
- 3:4:5:6-Dibenzylenebenzoic acid** and its silver salt and ethyl ester (MAROTTA), 1911, A., i, 981.
- α -Di-*o*-benzylenepyrindine**, synthesis of, and its salts (ERRERA), 1903, A., i, 855.
- α -Di-*o*-benzylenol- and -benzylenonepyridines**, and the dioxime of the ketone, preparation of (ERRERA), 1903, A., i, 855.
- Dibenzylethylcarbinol** (DAVIES and KIPPING), 1911, T., 299.
- 9:10-Dibenzyl-10-ethyl-dihydrophenanthrene**, 9-hydroxy- (ZINCKE and TROPP), 1908, A., i, 787.
- Dibenzylethylpropylsilicane** (CHALLENGER and KIPPING), 1910, T., 146; P., 3.
- Dibenzylethylpropylsilicanedisulphonic acid**, strychnine, *l*-menthylamine, and metallic salts of (CHALLENGER and KIPPING), 1910, T., 151.
- dl*-Dibenzylethylpropylsilicanesulphonic acid**, strychnine, *l*-menthylamine, and metallic salts of (CHALLENGER and KIPPING), 1910, T., 150.
- dl*- and *l*-Dibenzylethylpropylsilicanesulphonic acids**, alkaloidal salts (CHALLENGER and KIPPING), 1910, T., 760.
- Dibenzylethylpropylstannane** (SMITH and KIPPING), 1912, T., 2561; P., 314.
- Dibenzylethyl-silicol and -silicyl oxide** (ROBISON and KIPPING), 1908, T., 449; P., 25.
- Dibenzylethylsilicyl chloride** (CHALLENGER and KIPPING), 1910, T., 146.
- Dibenzylethylsulphonium**, mercuric iodide (HILDITCH and SMILES), 1907, T., 1399; P., 206.
- N*-Dibenzyl-*S*-ethyl-dithiourethane** (v. BRAUN), 1903, A., i, 14.
- Dibenzylfluorene** (THIELE and HENLE), 1906, A., i, 572.
- Dibenzylformal** (DESCUDÉ), 1903, A., i, 168.
- 1:3-Dibenzylcycloheptan-2-one** (BORSCHE), 1912, A., i, 194.
- 1:3-Dibenzylcyclohexan-2-one** (BORSCHE), 1912, A., i, 194.
- Dibenzylhomophthalide** (BAUER and WÖLZ), 1911, A., i, 872.
- $\alpha\beta$ -Dibenzylhydrazine**, nitroso- (THIELE), 1910, A., i, 889.
- Dibenzylhydrazines**, isomeric, monobenzoyl derivatives of (EBERHARDT and BEHREND), 1904, A., i, 346.
- s*-Dibenzylhydrazines**, *di-o*-, and *m*-hydroxy-, and their salts and derivatives (CURTIUS and KÜPPERS), 1912, A., i, 505.
- s*- and $\alpha\alpha$ -Dibenzylhydrazines**, *di-m*-chloro-, and their derivatives (CURTIUS and WEWER), 1912, A., i, 310.
- Dibenzylhydroxycampholic acids**, isomeric (HOUBEN and HAHN), 1903, A., i, 540.
- Dibenzylhydroxylamine** (v. BRAUN), 1903, A., i, 611.
- s*-Dibenzylhydriylhydrazine** and its hydrochloride, acyl and nitroso-derivatives (DARAPSKY), 1903, A., i, 309.
- Dibenzylidene *di*- and *tri*-sulphides**, hydroxides (BLOCH, HÖHN, and BUGGE), 1911, A., i, 47; (BUGGE and BLOCH), 1911, A., i, 60.
- tetrasulphide** (BLOCH, HÖHN, and BUGGE), 1911, A., i, 47.
- Dibenzylideneacetone**. See Distyryl ketone.
- Dibenzylideneacetoneimine**. See Distyrylamine, diacetyl derivative.
- Dibenzylidenediaminoguanidine** and its hydrochloride (STOLLÉ and HOFMANN), 1905, A., i, 28.
- 1:3-Dibenzylideneamino-2-phenyl-2:3-dihydro- $\beta\beta$ -naphthiminazole** and *di-m*-chloro- and *di-o*-hydroxy- (FRANZEN), 1907, A., i, 882.
- 1:3-Dibenzylideneamino-2-phenyl-2:3-naphthadihydroglyoxaline** (FRANZEN), 1905, A., i, 244.
- Dibenzylidenediaminostilbene** (FISCHER and PRAUSE), 1908, A., i, 219.
- 3:7-Dibenzylideneamino-2-styryl-4-quinazolone** (BOGERT, BELL, and AMEND), 1911, A., i, 163.
- 2:2'-Dibenzylideneaniline** (MAYER), 1912, A., i, 478.
- 4:4'-Dibenzylideneaniline** (ULLMANN), 1904, A., i, 728.
- Dibenzylideneanthracene** (LIPPMANN and FRITSCH), 1904, A., i, 865.
- Dibenzylideneanthracene**, bromo- (LIPPMANN and FRITSCH), 1907, A., i, 310.
- Dibenzylideneanthraquinonyl-2-hydrazone** (MÖHLAU, VIERTTEL, and REINER), 1912, A., i, 705.
- Dibenzylideneazaine**, *di-o*-amino- (COHN and BLAU), 1904, A., i, 674.
- Dibenzylidenebenzidine** (RUHEMANN and WATSON), 1904, T., 1176; P., 175.

- Dibenzylidenedimethoxydiaminostilbene** (FISCHER and PRAUSE), 1908, A., i, 220.
- Dibenzylidenedipicolinic dihydrazide** and *di-o*-chloro- (MEYER and MALLY), 1912, A., i, 515.
- 5:5'-Dibenzylidene-3:3'-ethylenedirhodanine**, *di-p*-hydroxy-, and *di-m*-nitro- (NÄGELE), 1912, A., i, 795.
- Dibenzylidenecyclohexanone** (WALLACH), 1907, A., i, 220.
- Dibenzylidenehydrazine**, *di-α*-chloro-, (STOLLÉ and THOMAE), 1906, A., i, 461.
- αα'*-*pp'*-tetrachloro-, and *αα'*-dichloro-*pp'*-dibromo- (STOLLÉ and WEINDEL), 1906, A., i, 707.
- αα'*-dichloro-*pp'*-dinitro- (STOLLÉ and BAMBACH), 1906, A., i, 710.
- m*- and *p*-hydroxy- (FRANZEN and EICHLER), 1910, A., i, 700.
- di-p*-hydroxy-, and its acyl derivatives (VORLÄNDER), 1906, A., i, 318.
- Dibenzylidenehydrazinoacethydrazide** (CURTIUS and HUSSONG), 1911, A., i, 400.
- Dibenzylidenepentaerythritol** and *di-o*-, *-m*-, and *-p*-nitro- (READ), 1912, T., 2091.
- Dibenzylidenecyclopentanone** (KAUFFMANN), 1908, A., i, 986.
- colour and physical properties of, and its derivatives and chloroacetates (STOBBE and HAERTEL), 1910, A., i, 43.
- Dibenzylidenecyclopentanone**, diamino- and dinitro-derivatives (MENTZEL), 1903, A., i, 497.
- di-p*-hydroxy-, and its dibenzoate (MENTZEL), 1903, A., i, 497.
- Dibenzylidenephenoxyacetone**. See *β*-Phenoxydistyryl ketone.
- N-Dibenzylidene-o-phenylenediamine**, *p*-chloro-, and *p*-chloro-*di-p*-nitro- (FISCHER and LIMMER), 1906, A., i, 895.
- N-Dibenzylidene-p-phenylenediamine** (RUHEMANN and WATSON), 1904, T., 1176; P., 175.
- N-Dibenzylidene-p-phenylenediamine**, *di-p*-chloro-*o* nitro- and *di-o*- and *tetra*-nitro- (SACHS and SICHEL), 1904, A., i, 594.
- Dibenzylidene-1:3-phenylenedihydrazine** (FRANZEN and EICHLER), 1908, A., i, 831.
- Dibenzylidenepicolide** (SCHOLTZ), 1912, A., i, 386.
- Dibenzylidenepropiophenone** (WIELAND and STENZL), 1908, A., i, 36.
- Dibenzylidenequinolinic dihydrazide**, and *di-o*-chloro- (MEYER and MALLY), 1912, A., i, 515.
- Dibenzylidenesuccinic acid** and its salts, ethyl ester, and anhydride (STOBBE, NAOUM, and KAUTZSCH), 1904, A., i, 589.
- Dibenzylidenesuccinic anhydride**, thermochromic properties of (STOBBE and v. VIGIER), 1904, A., i, 672.
- Dibenzylidenethiocarbohydrazide** and dinitro- (STOLLÉ and BOWLES), 1908, A., i, 474.
- Dibenzylidenetrimethyl-o-pyridyl ketone** (C. and A. ENGLER), 1903, A., i, 113.
- 1:3-Dibenzylindene** and its dibromide and nitrosochloride, and hydroxy- (THIELE and BÜHNER), 1906, A., i, 569.
- Dibenzyl ketone**, preparation of (APITZSCH), 1904, A., i, 510.
- condensation of, with aldehydes under the influence of hydrochloric acid (HERTZKA), 1905, A., i, 291.
- condensation of, with benzaldehyde (GOLDSCHMIEDT and SPITZAUER), 1904, A., i, 64.
- condensation of, with *p*-chloro-, *p*-hydroxy-, and *o*- and *p*-nitro-benzaldehydes (SCHIMETSCHKE), 1906, A., i, 368.
- condensation of, with *p*-dimethylaminobenzaldehyde (MAYERHOFER), 1907, A., i, 780.
- action of carbon disulphide and potassium hydroxide on (APITZSCH and METZGER), 1904, A., i, 510.
- phenylhydrazine and semicarbazone (SENDERENS), 1910, A., i, 489.
- Dibenzyl ketone**, *α*-cyano-, formation of (ATKINSON and THORPE), 1906, T., 1931.
- p*-dinitro-, and its oxime, phenylhydrazine, and thio-derivative (MANCHOT and KRISCHE), 1905, A., i, 142.
- diisonitroso*- (WIELAND), 1904, A., i, 432.
- Dibenzylmalamic acid**, synthesis of, and its silver salt (LUTZ), 1908, A., i, 345.
- Dibenzylmalonamide** (CONRAD and ZART), 1905, A., i, 754.
- Dibenzylmalononitrile**, *di-p*-amino- and *tetrabromodi-p*-amino- and their diacetyl derivatives and salts, and dichloro-*di-p*-amino- (ROMEO and MARCHESI), 1905, A., i, 441.
- di-p*-nitro- (ROMEO), 1903, A., i, 260.

- Dibenzylmalonyl chloride, anilide, and amide (LEUCHS and RADULESCU), 1912, A., i, 179.
- 5:5-Dibenzylmalonylcarbamide. See 5:5-Dibenzylbarbituric acid.
- $\alpha\alpha$ -Dibenzyl- α -methylacetophenone (HALLER and BAUER), 1909, A., i, 655.
- Dibenzylmethylallylammonium iodide (EMDE and SCHELLBACH), 1911, A., i, 282.
- Dibenzylmethylamine salts (EMDE), 1909, A., i, 709.
- Dibenzylmethylamine, *di-p*-hydroxy- (TIFFENEAU), 1911, A., i, 779.
- 1:3-Dibenzyl-2-methylbenzimidazole-2-ol and its platinichloride (FISCHER and VEIEL), 1905, A., i, 246.
- 2:4-Dibenzyl-1-methyl-3-cyclohexanol (HALLER and MARCH), 1905, A., i, 276.
- $\alpha\alpha$ -Dibenzyl- β -methylpropane- $\alpha\beta$ -diol (PARRY), 1911, T., 1173; P., 142.
- Dibenzylmethylsilicol (KIPPING and HACKFORD), 1911, T., 142; P., 9.
- Dibenzylmethylsilicyle oxide (KIPPING and HACKFORD), 1911, T., 142.
- Dibenzylmethylsulphonium mercuric iodide (HILDITCH and SMILES), 1907, T., 1398; P., 206.
- Dibenzyl-naphthalene (v. BOGUSKI), 1906, A., i, 825.
- Dibenzyl- α -naphthylamine and its hydrochloride (BUCHERER and SEYDE), 1907, A., i, 510.
- Dibenzyl- α -naphthylamine, *di-o*-nitro- (DARIER and MANNASSEWITCH), 1903, A., i, 82.
- Dibenzylolivil (KÖRNER and VANZETTI), 1912, A., i, 353.
- 2:5-Dibenzyl-1:3:4-oxadiazole (STOLLÉ and STEVENS), 1904, A., i, 627.
- 2-Dibenzylxyacetic acid and its ethyl ester (v. KOSTANECKI, ROST, and SZABRAŃSKI), 1905, A., i, 341.
- Di-o*-benzylxybenzaldazine (PASCAL and NORMAND), 1912, A., i, 147.
- 1:3-Dibenzylcyclopentan-2-one (BORSCHÉ), 1912, A., i, 194.
- 9:10-Dibenzylphenanthrene (WILLGERODT and ALBERT), 1911, A., i, 883.
- s*-Dibenzyl-*o*-phenylenediamine and its reactions (FISCHER and VEIEL), 1905, A., i, 245.
- 3:5-Dibenzyl-2- β -phenylethyl-1:4:6-pyronone (WEDEKIND, HÄUSSER-MANN, WEISSWANGE, and MILLER), 1911, A., i, 220.
- $\alpha\beta$ -Dibenzyl- α -phenylhydrazine hydrochloride (FRANZEN and KRAFT), 1911, A., i, 817.
- Dibenzylphosphinic acid, *di*hydroxy-, ethyl ester, diphenylurethane of, and aniline salt (VALLÉE), 1908, A., i, 976.
- Dibenzylphthalamide (TINGLE and LOVE-LACE), 1907, A., i, 1045.
- Dibenzylphthalan (LUDWIG), 1907, A., i, 702.
- Dibenzylphthalide (BAUER), 1905, A., i, 210.
- Dibenzylpicramide (BUSCH and KÖGEL), 1910, A., i, 473.
- Dibenzylpiperidonium bromide (SCHOLTZ and WOLFRUM), 1910, A., i, 773.
- $\alpha\alpha$ -Dibenzylpropane, α -bromo- (DAVIES and KIPPING), 1911, T., 300.
- Dibenzylisopropenylcarbinol (PARRY), 1911, T., 1173; P., 142.
- Dibenzylresorcinol sulphate, *diamino*- (FRIEDLÄNDER and v. HORVATH), 1903, A., i, 253.
- Dibenzylrongalite (FROMM and GAUPP), 1903, A., i, 970.
- Dibenzylsilicanediol, preparation of (ROBISON and KIPPING), 1912, T., 2146; P., 245.
- Dibenzylsilicol (DILTNEY and EDU-ARDOFF), 1906, A., i, 128.
- Dibenzylsilicols, α - and β - (ROBISON and KIPPING), 1908, T., 448; P., 25.
- Dibenzyl-silicols and-silicones (MARTIN), 1912, P., 326.
- Dibenzylsilicon dichloride (ROBISON and KIPPING), 1908, T., 451; P., 25.
- Dibenzylsilicone and its termolecular compound (ROBISON and KIPPING), 1908, T., 439; P., 25.
- Dibenzylstannic salts (SMITH and KIPPING), 1912, T., 2557; P., 314.
- Dibenzylsuccinic acids, *cis*- and *trans*- and their anhydrides (STOBBE and v. VIGIER), 1904, A., i, 673.
- as*-Dibenzylsulphone-ethane (POSNER and HAZARD), 1903, A., i, 243.
- s*-Dibenzyltartaric acid and its salts (ERLENMEYER), 1905, A., i, 784.
- 1:7-Dibenzyltetrahydrouric acid (FRANKLAND), 1910, T., 1691; P., 203.
- Dibenzyltetrazine, *di-p*-amino-, and its diacetyl derivative (JUNGHAHN and BUNIMOWICZ), 1903, A., i, 131.
- 2:5-Dibenzyl-1:3:4-thiodiazole (STOLLÉ and STEVENS), 1904, A., i, 627.
- $\alpha\alpha$ -Dibenzylthiolpropionic acid (POSNER and HAZARD), 1903, A., i, 243.
- Dibenzylthiol-quinol and its diacetyl derivative, -quinone, and -tetrahydroquinone (POSNER and LIPSKI), 1904, A., i, 1030.
- Dibenzylthiol-toluquinol and its diacetate and -toluquinone (POSNER and LIPSKI), 1904, A., i, 1032.

- Dibenzylurethane** (v. BRAUN), 1903, A., i, 611.
- Dibenzyl-*o*-xylyleneammonium bromide** (SCHOLTZ and WOLFRUM), 1910, A., i, 773.
- Dibenzyl-*o*-xylylenediamine**, and its hydrochloride (SCHOLTZ and WOLFRUM), 1910, A., i, 773.
- Dibiphenylene-ethylene**. See Tetraphenylene-ethylene.
- Diborneolamine** and its sulphate, and **Diborneolnitrosoamine** (EINHORN and JAHN), 1903, A., i, 44.
- Dibornylcarbamide** (NEVILLE and PICKARD), 1904, T., 687; P., 114.
- s*-Dibornylethylcarbamide** (FORSTER and ATTWELL), 1904, T., 1192; P., 91.
- s*-Dibornylthiocarbamide** (FORSTER and ATTWELL), 1904, T., 1193; P., 91.
- Di-3:5-dibromobenzylmalonic acid**, ethyl ester (WHEELER and CLAPP), 1908, A., i, 898.
- Diisobutenyl tetrabromide**. See $\beta\epsilon$ -Dimethylhexane, $\alpha\beta\epsilon\zeta$ -tetrabromo-.
- $\alpha\delta$ -Diisobutoxy- $\Delta\beta$ -butinene** (GAUTHIER), 1909, A., i, 355.
- Diisobutyl**. See $\beta\epsilon$ -Dimethylhexane.
- Di-*sec*.-butylamine** and its additive salts (MAILHE), 1905, A., i, 635.
- Diisobutylamine**, *N*-formyl derivative (VAN ROMBURGH), 1906, A., i, 3.
- salts (DEHN), 1912, A., i, 241.
- Diisobutylaminoacetic acid**, 2-methoxyphenyl ester, and its salts (EINHORN and HÜTZ), 1903, A., i, 90.
- Diisobutylamino-acetonitrile** and **-propionitrile** (v. BRAUN), 1907, A., i, 900.
- Di-*n*-butylaminosuccinic acid** and its salts and **dinitroso-** (FRANKLAND and SMITH), 1912, T., 60.
- Diisobutylammonium cyanide** (MICHAEL and HIBBERT), 1909, A., i, 91.
- 1:4-Di-*tert*.-butylbenzene** and its nitroderivatives (BÖDTKER), 1906, A., i, 943.
- p*-Di-*n*-butylbenzoquinone**, **dihydroxy-**, and its diacetate (FICHTER and WEISS), 1908, A., i, 659.
- 2:5-Di-*tert*.-butylbenzoquinone** and its monoxime (BÖDTKER), 1904, A., i, 802.
- Diisobutylcarbamic acid**, methyl ester (**methyl diisobutylurethane**) and ethyl ester (**ethyl diisobutylurethane**) (MCKEE), 1909, A., i, 635.
- Diisobutylcarbamide** and its oxalate and picrate (MCKEE), 1909, A., i, 635.
- n*-Dibutylcarbinol** and its acetate and formate (MALENGREAU), 1907, A., i, 376.
- Diisobutylcarbinol**, derivatives of (FREY-LON), 1910, A., i, 296.
- Diisobutyl-*s*-dihydropyrazine** (STOLLÉ and HILLE), 1904, A., i, 695.
- 4:4'-Di-*tert*.-butyldiphenyl** (SCHREINER), 1910, A., i, 367.
- Diisobutylene**, comparative oxidation of, by means of potassium and magnesium permanganate (PRIELESCHAEFF), 1907, A., i, 814.
- oxide (PRIELESCHAEFF), 1910, A., i, 86.
- Diisobutylene glycol**, action of acetic anhydride on (PRIELESCHAEFF), 1907, A., i, 816.
- Di-*n*-butyl ketone** and its semicarbazone (PICKARD and KENYON), 1912, T., 629.
- Diisobutyl ketone** and its semicarbazone (PONZIO), 1906, A., i, 66.
- derivatives of (FREY-LON), 1910, A., i, 296.
- Diisobutylmalonic acid**, esters and dichloride and diamide (FREY-LON), 1910, A., i, 358.
- Diisobutyloxadiazole** (STOLLÉ and HILLE), 1904, A., i, 695.
- Di-*sec*.-butyloxamide** (BLAISE and PICARD), 1912, A., i, 747.
- as*-Diisobutylpentamethylenediamine** and its derivatives (v. BRAUN), 1910, A., i, 820.
- Diisobutylphthalamic acid** (TINGLE and BRENTON), 1909, A., i, 799.
- Dibutylresorcinol** and its isomeride and their diacetates (GUREWITSCH), 1903, A., i, 27.
- Dibutylstannic oxide**, chloride, and bromide (PEIFFER, LEHNHARDT, LUFTENSTEINER, PRADE, SCHNURMANN, and TRUSKIER), 1910, A., i, 724.
- $\alpha\alpha$ -Di-*n*-butylsuccinic acid** (BLAISE and PICARD), 1912, A., i, 747.
- Diisobutylthiodiazole** (STOLLÉ and HILLE), 1904, A., i, 695.
- Di-*n*- and -*iso*-butyramides** (TARBOURIECH), 1903, A., i, 681.
- Diisobutyric acid**, α -**dithio-** (BILLMANN), 1906, A., i, 626.
- Dibutyric acids**, α -**dithio-**, and their diethyl esters (PRICE and TWISS), 1909, T., 1050; P., 165.
- Dibutyroin** (BOUVEAULT and LOCQUIN), 1906, A., i, 783.
- Dibutyryl** (**dipropyl diketone**) and its dioxime (LOCQUIN), 1905, A., i, 20; (BOUVEAULT and LOCQUIN), 1905, A., i, 560, 573.
- Diisobutyryl** and its oximes and reactions with magnesium organic compounds (BOUVEAULT and LOCQUIN), 1906, A., i, 803.

- Dibutrylacetic acid, ethyl ester, and its copper salt (LUNIAK), 1910, A., i, 90.
- Dibutrylcarbamide, *aa*-dihydroxy-, and its metallic salts (CLEMMENSEN and HEITMAN), 1909, A., i, 775.
- s*-Di-*n*-butrylhydrazide and its copper compound (STOLLÉ and ZINSSER), 1904, A., i, 696.
- Diisobutrylhydrazide (STOLLÉ and GUTMANN), 1904, A., i, 697.
- Dibutryloximes, *n*- and *n*-iso- (LOCQUIN), 1905, A., i, 19.
- Di-*p*-butrylphenylcarbamide (KUNCHELL), 1911, A., i, 990.
- Dicalcium salts. See under Calcium.
- Dicamphanylamine, 1:1-dihydroxy-. See Diborneolamine.
- Dicamphenoisopyrazine and its mercurichlorides, methiodide, and picrate (EINHORN and JAHN), 1903, A., i, 44.
- Dicamphenone, and its derivatives (CASTELLANA and FERRERO), 1911, A., i, 217.
- i*-Dicamphenoneimine (CASTELLANA and FERRERO), 1911, A., i, 217.
- Di-*β*-camphidone anhydride and its bromide (TAFEL and BUBLITZ), 1906, A., i, 44.
- Dicamphor, derivatives of (ODDO), 1911, A., i, 475.
- pinacone (MALMGREN), 1903, A., i, 711.
- Dicamphor, *pernitroso*-, derivatives of (CASTELLANA and FERRERO), 1911, A., i, 217.
- Di-*i*-camphor, *pernitroso*- (CASTELLANA and FERRERO), 1911, A., i, 217.
- Dicamphorquinone and *iso*Dicamphorquinone (ODDO), 1905, A., i, 448.
- Dicamphor-*β*-sulphonic acid, catechol, resorcinol and quinol esters (HILDITCH), 1911, A., i, 893.
- Dicamphor-*β*-sulphonyl disulphide (HILDITCH), 1911, A., i, 892.
- Dicamphoryl *β*-*α*-disulphoxide (HILDITCH), 1910, T., 1096; P., 95.
- Dicamphorylamine and its hydrochloride and sulphate and Dicamphorylnitrosamine (EINHORN and JAHN), 1903, A., i, 44.
- Dicamphorylarsinic acid and its cadmium and silver salts, and chloride (MORGAN and MICKLETHWAIT), 1908, T., 2144; P., 268.
- s*-Dicamphorylcarbamide (FORSTER and FIERZ), 1905, T., 120; P., 21.
- Dicamphorylethylcarbinol (MALMGREN), 1903, A., i, 711.
- Dicamphorylmethylcarbinol and its oxime (MALMGREN), 1903, A., i, 711.
- Dicamphorylphosphinic acid and its metallic salts (MORGAN and MOORE), 1909, P., 310; 1910, T., 1697.
- Dicamphorylthiocarbamide (FORSTER and JACKSON), 1907, T., 1887; P., 242.
- α*-Dicamphylic acid and its salts (PERKIN), 1903, T., 862.
- dihydroxy-, and its silver salt and acetyl derivative (PERKIN), 1903, T., 864.
- Dicaproin (BOUVEAULT and LOCQUIN), 1905, A., i, 561.
- Dicarbamide, benzylidene derivative, constitution of (STOLLÉ), 1906, A., i, 315.
- Curtius and Heidenreich's, constitution of (STOLLÉ), 1907, A., i, 655.
- Dicarbamidodiphenyldecane (BORSCHÉ and WOLLEMAN), 1912, A., i, 23.
- 1:4-Dicarbamidopiperazine and its *dinitroso*-derivative (BACKER), 1912, A., i, 731.
- Dicarbamilodiphenylmethylenediamine (SENIER and SHEPHEARD), 1909, T., 496.
- Dicarbamilodiphenyl-*p*-tolylmethylenediamine (SENIER and SHEPHEARD), 1909, T., 500.
- Dicarbamilomethylenediamines (SENIER and SHEPHEARD), 1909, T., 494; P., 72.
- Dicarbethoxyacetanilide (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 136.
- oo'*-Dicarbethoxyaminotolane (RUGGLI), 1912, A., i, 914.
- Di-*α*-carbethoxybutyrylbenzidine (REMFY), 1911, T., 622.
- αβ*-Dicarbethoxy-*γγ*-dimethylbutyrolactone (HALLER and BLANC), 1906, A., i, 625.
- 3:5-Dicarbethoxy-4-ketopenthiophen-2:6-disulphonic acid and its salts (APITZSCH and BAUER), 1909, A., i, 48.
- 3:5-Dicarbethoxy-4-ketopenthiophen-2:6-dithiolacetic acid, esters (APITZSCH), 1909, A., i, 48.
- 3:5-Dicarbethoxy-4-ketopenthiophen-2:6-dithiophenylurethane (APITZSCH and BAUER), 1909, A., i, 48.
- Dicarbethoxy-*l*-tyrosineamide (KOENIGS and MYLO), 1909, A., i, 88.
- oo'*-Dicarbimidotolane (RUGGLI), 1912, A., i, 914.
- Dicarbindicotin, dihydroxy- (KUSEL), 1904, A., i, 619.
- Dicarbo-base, Wessel's, reactions of (SCHALL), 1903, A., i, 201.
- Dicarbocarbazine, diamino- (PELLIZZARI and RONCAGLIOLLO), 1907, A., i, 834.

- Dicarbo-ethoxy- and -methoxy-phenyl-acetic acids**, $\beta\delta$ -(or ζ), $\gamma\epsilon$ -dihydroxy-, esters (HALLER and MARCH), 1904, A., i, 713.
- Dicarbonaphthylaminodiphenylmethylenediamine** (SENIER and SHEPHEARD), 1909, T., 497.
- Dicarbonaphthylaminodi-*p*-tolylmethylenediamine** (SENIER and SHEPHEARD), 1909, T., 501.
- Dicarbonatodiphenyl, dihydroxy-** (LIEBERMANN and HERMUTH), 1912, A., i, 447.
- 3:4:3':4'-Dicarbonyldioxybenzil** (BARGER and EWINS), 1908, T., 737.
- 3:4:3':4'-Dicarbonyldioxy-*aa*-dichlorodeoxybenzoin** (BARGER and EWINS), 1908, T., 736.
- 3:4:3':4'-Dicarbonyldioxy- $\alpha\beta$ -di- and tetra-chloro-*s*-diphenylethane** (BARGER and EWINS), 1908, T., 740.
- Dicarbonyl-*o*-phenyleneguanidine**, imino- (PIERON), 1908, A., i, 926.
- Dicarbo-*o*- and -*p*-toluidiodiphenylmethylenediamine**, dithio- (SENIER and SHEPHEARD), 1909, T., 500.
- Dicarbo-*o*- and -*p*-toluidiodi-*p*-tolylmethylenediamine**, dithio- (SENIER and SHEPHEARD), 1909, T., 503.
- Dicarboxyaconitic acid** (*propylenepentacarboxylic acid*), methyl ester and its reaction with aniline and phenylhydrazine (RUHEMANN), 1907, T., 1359; P., 195.
- and sodium and methylammonium derivatives (ANSCHÜTZ), 1903, A., i, 550.
- transformations of (ANSCHÜTZ and DESCHAUER), 1906, A., i, 727.
- $\alpha\delta$ -Dicarboxyadipic acid** (*butanetetra-carboxylic acid*), $\beta\gamma$ -diamino- and the lactam of the $\alpha\delta$ -dibromo- $\alpha\gamma$ -diamino-acid (TRAUBE), 1903, A., i, 76.
- $\beta\gamma$ -dihydroxy-, ethyl ester (THOMPSON), 1912, P., 147.
- Dicarboxybenzenesulphonylhydroxamic acid** (DAVIS and SMILES), 1910, T., 1295.
- 2:6-Dicarboxylbenzoyl-1:5-dihydroxynaphthalene** (BENTLEY, FRIEDL, and WEIZMANN), 1907, T., 1592; P., 216.
- 2:4-Dicarboxydicyclo-0:1:1-butane-1:3-diacetic acid**, and its methyl and ethyl esters (GUTHZEIT and HARTMANN), 1910, A., i, 388.
- 1:3-Dicarboxycyclobutane-2:4-diacetic acids**, isomeric, and their methyl esters (GUTHZEIT, WEISS, and SCHAEFER), 1909, A., i, 933.
- 2:4-Dicarboxydicyclo-0:1:1-butane-1:3-dimalonic acid**, ethyl ester (GUTHZEIT and HARTMANN), 1910, A., i, 389.
- 3:5-Dicarboxy-4:4-diethyltrimethylene-dicarbonimide**, amide of, and its metallic salts (GHIGLIENO), 1911, A., i, 321.
- 3'':4''-Dicarboxy-2'':5''-dimethyl-4-pyrrolediphenic acid** and its 3'':4''-ethyl ester (SCHMIDT and SCHALL), 1907, A., i, 724.
- 3:4-Dicarboxy-*N*-2:5-dimethylpyrrol-*p*-acetophenone**, ethyl ester (BÜLOW and NOTTBOHM), 1903, A., i, 274.
- 3:4-Dicarboxy-*N*-2:5-dimethylpyrrol-*p*-benzoylpyruvic acid**, ethyl ester (BÜLOW and NOTTBOHM), 1903, A., i, 275.
- 2:2'-Dicarboxydiphenyl sulphide**. See 2:2'-Thiodibenzoic acid.
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- oo*-Dicarboxy- $\beta\beta'$ -diphenylisobutyric acid**, and its diamide (MITCHELL and THORPE), 1910, T., 2281.
- 2:2'-Dicarboxydiphenylsulphone** (MAYER), 1910, A., i, 261.
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- Dicarboxyglutaconic acid**, and its sodium salt, from the interaction of methylene chloride and the sodium derivative of ethyl malonate (TUTIN), 1907, T., 1143; P., 158, 245.
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- 2:4-Dicarboxy- $\Delta^{2:5}$ -cyclohexadien-5-ol-1-acetic acid**, ethyl esters (v. PECHMANN, BAUER, and OBERMILLER), 1904, A., i, 592.
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- Dicarboxylic anhydrides**, reactions of, with magnesium organic compounds (HOUBEN and HAHN), 1908, A., i, 539; (BAUER), 1909, A., i, 585.
- β -Dicarboxylic compounds**, reaction between alkylideneurethanes and (BIANCHI and SCHIFF), 1911, A., i, 977; (BIANCHI), 1912, A., i, 542.
- $\alpha\alpha$ -Dicarboxy- α -methylaconitic acid**, methyl ester (ANSCHÜTZ and DESCHAUER), 1906, A., i, 728.
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- Di- α -carboxyphenyl disulphoxide** (HILDITCH), 1910, T., 2591.
- 2:4-Dicarboxyphenylacetic acid**, 5-hydroxy-, and its derivatives (v. PECHMANN, BAUER, and OBERMILLER), 1904, A., i, 592.
- 5:6-Dicarboxy- α -tolylglyoxylic acid**, 4-hydroxy-, and its methyl ether and their phenylhydrazones (DIMROTH), 1909, A., i, 486; 1910, A., i, 488.
- Dicarboxytricarballic acid**, methyl ester (ANSCHÜTZ and DESCHAUER), 1906, A., i, 728.
- Dicavacrolpiperazine** (STÉVIGNON), 1910, A., i, 781.
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- $\alpha\gamma$ -Di-*p*-chlorophenyl- $\alpha\alpha\beta\gamma$ -tetrachloropropane** (STRAUS, KRIER, and LUTZ), 1910, A., i, 567.
- Di-*m*-dichlorophenylidonium hydroxide** and its salts (WILLGERODT and BÖLLERT), 1910, A., i, 827.
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- Dicyanodiamidine**, amino-, preparation of (JONA), 1908, A., i, 964.
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- Di-*p*-dimethylaminobenzaldehyde**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.
- 1:2-Di-*p*-dimethylamino-benzoyl-, benzyl-, and -hydroxybenzyl-benzenes** (GUYOT and PIGNET), 1908, A., i, 569.
- Di-*p*-dimethylaminobenzylidene-dibenzyl ketone and -phenylacetone** and their hydrochlorides (MAYERHOFER), 1907, A., i, 780.
- 5:5'-Di-*p*-dimethylaminobenzylidene-3:3'-ethylenerrhodanine** (NÄGELE), 1912, A., i, 795.
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- Di-*p*-dimethylaminoindigotin** and its salts (FREUND and WIRSING), 1907, A., i, 254.
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- p*-Diphenylamine** and its derivatives (WIELAND and SÜSSER), 1911, A., i, 570.
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***aa*-Diethoxybutane, $\beta\gamma$ -di-bromo-** (VIGUIER), 1909, A., i, 691.

***ad*-Diethoxybutane** (GAUTHIER), 1909, A., i, 355.

***aa*-Diethoxybutinene (ethyl acetal of tetrolaldehyde) and bromo-** (VIGUIER), 1909, A., i, 691.

derivatives of (VIGUIER), 1912, A., i, 72.

***ad*-Diethoxy- $\Delta\beta$ -butinene** (GAUTHIER), 1909, A., i, 355.

γ -Diethoxybutyric acid, ethyl ester, and potassium salt (WOHL and SCHWEITZER), 1906, A., i, 233.

- as-ββ*-Diethoxyisobutyric acid and its ethyl ester (TSCHITSCHIBABIN), 1906, A., i, 397.
- 7'-8-Diethoxycaffeine (FISCHER and ACH), 1906, A., i, 220.
- 2:4-Diethoxy-5-carbethoxyphenyl formylmethyl ketone (LIEBERMANN and LINDENBAUM), 1909, A., i, 404.
- 2':4'-Diethoxychalkone, 5-bromo-2-hydroxy-, and 2-hydroxy- (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- Diethoxycyanuric chloride (DIELS and LIEBERMANN), 1903, A., i, 868.
- Diethoxydibenzylanthracene (LIPPMANN and FRITSCH), 1907, A., i, 310.
- Diethoxydibenzylideneacetone. See Diethoxydistyryl ketone.
- 5:5-Diethoxy- α -dimethyldihydrouracil (5:5-diethoxy-2:6-dioxy-3:4-dimethyldihydropyrimidine), 4-hydroxy- (HENKEL), 1911, A., i, 160.
- 5:5-Diethoxy- β -dimethyldihydrouracil (5:5-diethoxy-2:6-dioxy-1:4-dimethyldihydropyrimidine), 4-hydroxy- (HENKEL), 1911, A., i, 160.
- $\beta\beta$ -Diethoxy- $\alpha\alpha$ -dimethylpropionic acid, ethyl ester (SHDANOVITSCH), 1911, A., i, 10.
- α -Diethoxydinaphthastilbene and its haloids and hydrogen perhaloids (HANTZSCH and DENSTORFF), 1906, A., i, 745.
- 2:2'-Diethoxydiphenyl and its dialdehyde, synthesis of (GATTERMANN), 1908, A., i, 35.
- 4:4'-Diethoxydiphenyl (ULLMANN), 1904, A., i, 728.
- sulphoxide, preparation of (GAZDAR and SMILES), 1908, T., 1835; P., 216.
- disulphoxide (HILDITCH), 1911, T., 1097.
- 4:5-Diethoxy-4:5-diphenyldihydroglyoxalone, *syn*- and *anti*- (BILTZ and RIMPEL), 1909, A., i, 742.
- 4:4'-Diethoxydiphenyl- α -disulphone (HILDITCH), 1908, T., 1527; P., 192.
- 2:2'-Diethoxydiphenylmethane, 5:5'-dibromo- (DIELS and BUNZL), 1905, A., i, 432.
- 4:4'-Diethoxydiphenylsulphone (SMILES and LE ROSSIGNOL), 1906, T., 707; P., 24, 87.
- 4:4'-Diethoxydiphenylthiocarbamide (FROMM and VETTER), 1907, A., i, 983.
- Diethoxydiphenyl. See also Diphenetyl.
- 2:2'-Diethoxydistyryl ketone and 5:5-dibromo- (FABINYI and SZÉKI), 1907, A., i, 940.
- Diethoxy-*m*-ditolyl and *tetranitro*- (WINSTON), 1904, A., i, 274.
- 1- and 2- $\alpha\beta$ -Diethoxyethylthiolanthraquinones (GATTERMANN), 1912, A., i, 1003.
- 5:6-Diethoxy-2-ethylthiolpyrimidine and its hydrochloride (JOHNSON and HEYL), 1907, A., i, 878.
- 9:9-Diethoxyfluorene (SMEDLEY), 1905, T., 1252.
- $\alpha\eta$ -Diethoxyheptane (DIONNEAU), 1906, A., i, 134.
- $\beta\epsilon$ -Diethoxy- $\Delta\gamma$ -hexinene (GAUTHIER), 1909, A., i, 355.
- Diethoxymethyldihydrouracils, α - and β -, hydroxy- (BEHREND, OSTEN, and BEER), 1906, A., i, 310.
- Diethoxymethyl ether (DESCUDÉ), 1904, A., i, 706.
- $\beta\beta$ -Diethoxy- α -methylvaleric acid, ethyl ester (TSCHITSCHIBABIN), 1905, A., i, 283.
- β -3:5-Diethoxyphenoxy-cinnamic acid, ethyl ester (RUHEMANN), 1903, T., 1135; P., 202.
- 3:5-Diethoxyphenoxyfumaric acid, ethyl ester (RUHEMANN), 1903, T., 1134; P., 202.
- p*-Diethoxyphenyl diselenide (TABOURY), 1906, A., i, 835.
- Di-*p*-ethoxyphenylcyanuric chloride (DIELS and LIEBERMANN), 1903, A., i, 868.
- 3:5-Diethoxy-1-phenyl-4:5-dihydrotriazole (ACREE), 1903, A., i, 867.
- Di-*p*-ethoxyphenylmalonic acid, methyl and ethyl esters (GUYOT and ESTEVA), 1909, A., i, 306.
- 2-*op*-Diethoxyphenyl-4-methyl-1:4-benzopyran, 7-hydroxy-, and its 7-acetoxy- derivative (BÜLOW and SAUTERMEISTER), 1904, A., i, 262.
- 2-*op*-Diethoxyphenyl-4-methylene-1:4-benzopyran, 5:7-, 6:7-, and 7:8-dihydroxy- and their salts and diacetyl derivatives (BÜLOW and SAUTERMEISTER), 1905, A., i, 150.
- 5-*op*-Diethoxyphenyl-3-methylisooxazole (BÜLOW and SAUTERMEISTER), 1904, A., i, 262.
- 3:6-Diethoxy-9-phenylxanthonium-2'-carboxylic acid, ethyl ester, salts of (KEHRMANN and SCHEUNERT), 1910, A., i, 407.
- 4:6-Diethoxyisophthalic acid (EYKMAN, BERGEMA, and HENRARD), 1905, A., i, 359.

- β -Diethoxypropionic acid**, α -chloro-, ethyl ester (WOHL and SCHWEITZER), 1907, A., i, 194.
- 2- α -Diethoxy-4-propylphenol**, 6: β -dibromo- (ZINCKE and HAHN), 1904, A., i, 42.
- Diethoxypyridine**, dibromo- and dichloro- (SELL), 1908, T., 1996, 1999; P., 225.
- 2-4-Diethoxyquinazoline** (BOGERT and MAY), 1909, A., i, 330.
- Di-*o*-ethoxystilbene** (PASCAL and NORMAND), 1912, A., i, 147.
- 6:6'-Diethoxythioindigo**, dibromo-, and chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 411.
- Diethoxythioxan** and its molecular refraction (CLARKE and SMILES), 1909, T., 992; P., 145.
additive compound with ethyl iodide and mercuric iodide (CLARKE and SMILES), 1909, T., 1003.
- 4:4'-Diethoxytriphenylacetone** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and V. BODECKER), 1911, A., i, 868.
- 3:5-Diethoxytritanic acid** and its ethyl ester (v. LIEBIG), 1905, A., i, 782.
- $\gamma\gamma$ -Diethoxyvaleric acid**, propyl ester, and its reduction (BOUVEAULT and BLANC), 1905, A., i, 13.
- Diethyl hydrogen phosphate**, tetrafluoro- (SWARTS), 1909, A., i, 262.
and tetrafluoro-, electrical conductivity of, and rate of inversion of sucrose by (VAN HOVE), 1909, A., i, 626.
phosphite (LEVITSKY), 1903, A., i, 733.
sulphide, β -amino-, and its salts (SCHNEIDER, MÜLLER, and BECK), 1912, A., i, 192.
chloroamino-, hydrochloride and picrate (GABRIEL and COLMAN), 1912, A., i, 529.
- disulphide**, preparation of (PRICE and TWISS), 1908, T., 1399.
electrolytic preparation of (PRICE and TWISS), 1906, P., 260; 1907, T., 2021; P., 263.
diamino- (NEUBERG and ASCHER), 1907, A., i, 1008.
- α - and β -Diethylacenaphthindandione** (FREUND and FLEISCHER), 1910, A., i, 491.
- α -Diethylacenaphthindandionic acid** (FREUND and FLEISCHER), 1910, A., i, 491.
- Diethylacetamide**, bromo-. See Neuronal.
- Diethylacetoacetaldehyde** and its semicarbazone (COUTURIER and VIGNON), 1905, A., i, 571.
- Diethylacetoacetamide** (MEYER), 1907, A., i, 298.
- Diethylacetoacetic acid**, methyl ester, preparation of (GRIGNARD), 1903, A., i, 791.
- Diethylacetone**. See Pentane- γ -carboxylonitrile.
- Diethylacetylbenzamide** (FREUND and FLEISCHER), 1911, A., i, 236.
- Diethylacetyldiethylamide** (EINHORN and v. DIESBACH), 1906, A., i, 398.
- $\beta\beta$ -Diethylacrylic acid**, α -cyano- (GARDNER and HAWORTH), 1909, T., 1965.
- $\beta\beta$ -Diethylacrylonitrile** (GARDNER and HAWORTH), 1909, T., 1965.
- Diethylamine** and water, mutual solubilities of (LATTEY), 1905, A., i, 747.
salts (DEHN), 1912, A., i, 241, 242.
acrylate and hydriodide (FLÜRSCHHEIM), 1904, A., i, 19.
benzenesulphonate (AUTENRIETH and BERNHEIM), 1904, A., i, 978.
cobaltinitrite (CUNNINGHAM and PERKIN), 1909, T., 1565.
diethyldithiocarbamate (HAASE and WOLFFENSTEIN), 1904, A., i, 856.
ferrichloride (SCHOLTZ), 1910, A., i, 96.
- Diethylamine**, β -amino- β' -hydroxy-, and its platinichloride (KNORR and BROWNSDON), 1903, A., i, 153.
 α -cyano- (HENRY), 1904, A., i, 854.
tetrafluoro-, and its salts and *N*-nitroso-derivative (SWARTS), 1904, A., i, 854.
dithio- (v. BRAUN), 1903, A., i, 611.
- Diethylaminoacetic acid**, bornyl and menthyl esters and their salts (EINHORN and JAHN), 1903, A., i, 351.
phenol esters, and their salts (EINHORN and HÜTZ), 1903, A., i, 90.
- Diethylaminoacetone**, methiodide of (KLAGES and MARGOLINSKY) 1904, A., i, 145.
- p*-Diethylaminoisobutylbenzenes** (SACHS and MICHAELIS), 1906, A., i, 575.
- β -Diethylamino- β -amylacrylic acid**, ethyl ester (MOUREU and LAZENNEC), 1906, A., i, 957.
- 1-Diethylaminoanthraquinone**, 5:8-dibromo- (SÉVERIN), 1907, A., i, 218.
8-nitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 499.
- 1:4-Diethylaminoanthraquinone-5-sulphonic acid**, potassium salt (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 243.

s-4:8-Diethyldiaminoanthrarufin (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 1057.

Diethylaminoisoantipyrine (MICHAELIS and WREDE), 1907, A., i, 251.

Diethyl-p-aminoauramine and its picrate (GRANDMOUGIN and LANG), 1909, A., i, 974.

Diethylaminoazoantipyrine (STOLZ), 1909, A., i, 71.

p-Diethylaminoazobenzene and its additive salts (GNEHM and BAUER), 1905, A., i, 831.

coloured salts of (HANTZSCH and HILSCHER), 1908, A., i, 485.

dihydrochloride and pentahydrobromide (KAUFLE and KUNZ), 1909, A., i, 137.

Diethylaminoazobenzene-β-naphthalene. See Naphthalene-β-azodiethylaniline.

p-Diethylaminoazobenzenesulphonic acid and its salts (HANTZSCH and HILSCHER), 1908, A., i, 470.

p-Diethylaminobenzaldehyde, oxime and phenylhydrazone of (ULLMANN and FREY), 1904, A., i, 423.

p-Diethylaminobenzhydramine and its hydrochloride (MERCK), 1906, A., i, 661.

p-Diethylaminobenzoic acid, nitration of (REVERDIN and DE LUC), 1909, A., i, 476.

action of nitrous acid on (BAUDISCH), 1907, A., i, 131.

diethylaminoethyl ester (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 924.

p-Diethylaminobenzoic acid, 3-nitro- (BAUDISCH), 1907, A., i, 132.

p-Diethylaminobenzophenoneoxime (MERCK), 1906, A., i, 661.

2'-Diethylaminobenzoylbenzoic acid, 3:6-dibromo-, and its methyl ester and acetyl derivative (SÉVERIN), 1906, A., i, 508.

and its ethyl ester and nitroso-derivative (SÉVERIN), 1907, A., i, 217.

p-Diethylaminobenzoyl-2-p-dimethylamino-benzoylbenzene and its phenylhydrazone and phthalazine and -benzylbenzene and trinitro- (GUYOT and PIGNET), 1908, A., i, 569.

Diethylaminobenzyl alcohol and its derivatives (V. BRAUN and KRUBER), 1912, A., i, 971.

p-Diethylaminobenzyl-1-aminoanthraquinone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 995.

2-o-Diethylaminobenzylbenzoic acid, 3:6-dibromo- (SÉVERIN), 1907, A., i, 218.

1-p-Diethylaminobenzyl-2-p-dimethylaminobenzylbenzene (GUYOT and PIGNET), 1908, A., i, 569.

p-Diethylaminobenzylideneaniline (F. and L. SACHS), 1905, A., i, 190, 274.

p-Diethylaminobenzylidenecarbituric acid (SACHS and MICHAELIS), 1906, A., i, 576.

p-Diethylaminobenzylidenecamphor, preparation of, and its hydrochloride (HALLER and BAUER), 1909, A., i, 595.

p-Diethylaminobenzylidenecyanoacetamide (SACHS and MICHAELIS), 1906, A., i, 576.

p-Diethylaminobenzylidenemalononitrile (SACHS and MICHAELIS), 1906, A., i, 576.

p-Diethylaminobenzylidenesemihydroxybenzoic acid (SACHS and MICHAELIS), 1906, A., i, 576.

p-Diethylaminobenzylidenesemicarbazide (F. and L. SACHS), 1905, A., i, 190, 274.

p-Diethylaminobenzylidenesemiosemicarbazide (SACHS and MICHAELIS), 1906, A., i, 575.

5-Diethylaminobenzyl-3-methylbenzoic acid, 2-hydroxy-, and its sodium salt (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.

o-Diethylaminobenzylphenyltetramethyldiaminodiphenylcarbinol and its salts, and its leuco-base (GUYOT and PIGNET), 1908, A., i, 570.

3-Diethylamino-4:6-bisdinaphthaxanthylbenzene, 1-hydroxy- (FOSSE and ROBYN), 1905, A., i, 607.

5-Diethylaminobenzyl-3-methylbenzoic acid, 2-hydroxy- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.

5-Diethylaminodichlorobenzyl-3-methylbenzoic acid, 2-hydroxy- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.

Diethylaminoconiline and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 939.

Diethylaminodiazobenzene (VIGNON and SIMONET), 1905, A., i, 495.

Diethylamino-3:4-dihydroxyphenylacetone, methylene ether (KNO-EVENAGEL and MERCKLIN), 1904, A., i, 982.

- γ-Diethylamino-αα-dimethylacetoacetic acid**, ethyl ester (GAULT and THIRODE), 1910, A., i, 356.
- p-Diethylamino-p-dimethylaminobenzylbenzhydrol** (GUYOT and PIGNET), 1908, A., i, 569.
- Diethylamino-9-p-dimethylamino-phenyl-anthracene and -dihydro-anthracene** (GUYOT and PIGNET), 1908, A., i, 569.
- γ-Diethylamino-αγ-dimethylbutyl benzoate** (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 925.
- 4'-Diethylamino-2:5-dimethyldiphenylmethane**, 3:6-*di*- and 3:6:3'-*tri*-bromo-4-hydroxy-, and the acetate of the dibromo-compound (AUWERS and WEHR), 1904, A., i, 998.
- 4'-Diethylamino-3:5-dimethyldiphenylmethane**, 2:6-*di*bromo-, and its hydrobromide (AUWERS and HÄHNLE), 1904, A., i, 999.
- Di-p-ethylaminodiphenylamine** and its triacetyl derivative (GNEHM and SCHRÖTER), 1906, A., i, 211.
- p-Diethylaminodiphenylamine-m-carboxylic acid**, *p*-hydroxy- (CASSELLA & Co.), 1903, A., i, 860.
- 4'-Diethylaminodiphenylmethane**, 2:3:5:6-tetrachloro-4-hydroxy-, and its hydrochloride and acetyl derivative (ZINCKE and HUNKE), 1906, A., i, 738.
- Diethyldiaminodiphenylmethane** and its nitroso-derivative and phenylthiocarbamide (v. BRAUN), 1908, A., i, 685.
- Di-p-ethylaminoditolylamine** and* its tribenzoyl derivative (GNEHM and SCHRÖTER), 1906, A., i, 212.
- Diethylaminoethanol**, *o*- and *m*-aminobenzoates and *o*-nitrobenzoate of, and their hydrochlorides (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 845.
- m*-dimethylaminobenzoate and *N*-dimethylanthranilate of** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 846.
- p*-dimethylaminobenzoate** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 847.
- β-Diethylaminoethyl p-aminobenzoate hydrochloride** (MERCK), 1908, A., i, 266.
- p*-amino- and *p*-nitro-cinnamates** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 169.
- β-Diethylaminoethyl benzoate** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 266.
- and its hydrochloride (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1906, A., i, 952; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 167.
- phthalate and its additive salts (PYMAN), 1908, T., 1804; P., 208.
- salicylate and its hydrochloride (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 176.
- p-Diethylaminoethylcarbonatobenzoic acid**, methyl ester, and its hydrochloride (EINHORN and ROTHLAUF), 1911, A., i, 705.
- Diethylaminoethylguaiacol** and its hydrobromide (EINHORN and ROTHLAUF), 1911, A., i, 704.
- 3:3-Diethylamino-1-ethyl-ψ-isatin** and 5:7-*di*bromo- and 5:7-*dichloro*- (HASLINGER), 1907, A., i, 976.
- 2-β-Diethylaminoethylpiperidine** and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 939.
- 4-Diethylamino-1-α-ethylpropylbenzene** and its additive salts (F. and L. SACHS), 1905, A., i, 191, 274.
- 2-β-Diethylaminoethylpyridine** and its additive salts (LÖFFLER), 1904, A., i, 265.
- Diethylaminoethylsalicylic acid**, ethyl and methyl esters (EINHORN and ROTHLAUF), 1911, A., i, 704.
- Diethylaminoethylthymol** and its citrate (EINHORN and ROTHLAUF), 1911, A., i, 704.
- Diethylaminofluoran**, *mono*- and *tri*-chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 509.
- δ-Diethylamino-Δ^{8c}-heptadi-inene** and its salts (VIGUIER), 1912, A., i, 7.
- 2-Diethylaminocyclohexanol** and its hydrochloride (BRUNEL), 1905, A., i, 869.
- β-Diethylamino-β-hexylacrylic acid**, ethyl ester (MOUREU and LAZENNEC), 1906, A., i, 957.
- β-Diethylamino-α-hydroxyisobutyric acid** and its ethyl ester (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1908, A., i, 938.
- 2-Diethylaminomesitylenic acid** (WHEELER and HOFFMAN), 1910, A., i, 666.
- Diethylaminomethanesulphonic acid**, sodium salt (KNORVENAGEL and MERCKLIN), 1904, A., i, 981.

- Diethylaminomethanol**, acetyl derivative (KNOEVENAGEL and MERCKLIN), 1904, A., i, 981.
- α -Diethylamino-*p*-methoxy-phenylacetamide** and **-phenylacetonitrile** (KNOEVENAGEL and MERCKLIN), 1904, A., i, 982.
- N*-Diethylaminomethyl-alkyl- and aryl-amides** (EINHORN, BISCHKOPFF, SZELINSKI, and SPRÖNGERTS), 1906, A., i, 246.
- Diethylaminomethyldiethylcarbinol** and its additive salts (SÜSSKIND), 1906, A., i, 133; (PAAL and WEIDENKAFF), 1906, A., i, 236.
- ω -Diethylaminomethylisatin** (EINHORN and GÖTTLER), 1910, A., i, 137.
- Diethylaminomethylmandelamide** (EINHORN), 1908, A., i, 611.
- Diethylaminomethylmethylethylcarbinol** (EINHORN, FIEDLER, LADISCH, and UHLFELDER), 1910, A., i, 172.
- Diethylaminomethyl isopropyl ketone** (GAULT and THIODE), 1910, A., i, 356.
- Diethylaminomorphide** and its salts (WIELAND and KAPPELMEIER), 1911, A., i, 746.
- Diethylaminonitriles** (KNOEVENAGEL and MERCKLIN), 1904, A., i, 981.
- 3-Diethylaminophenonaphthoxazone**, formation of, from Nile-blue A and from Nile-blue 2B, and its hydrochloride (THORPE), 1907, T., 331; P., 33.
- α -*p*-Diethylaminophenylacetoacetic acid**, α -hydroxy-, methyl ester (GUYOT and BADONNEL), 1909, A., i, 305.
- Diethylaminophenylacetonitrile** and its methiodide (KLAGES and MARGOLINSKY), 1904, A., i, 145; (KNOEVENAGEL and MERCKLIN), 1904, A., i, 981.
- 4'-Diethylamino-9-phenylacridine** (ULLMANN BADER, and LABHARDT), 1908, A., i, 52.
- β -Diethylamino- β -phenylacrylonitrile** (MOUREU and LAZENNEC), 1906, A., i, 956.
- Diethylaminophenyl alkylaminonaphthyl ketones** and their conversion into auramines (NOELTING), 1904, A., i, 621.
- m*-Diethylaminophenylauramine** (GRANDMOUGIN and LANG), 1909, A., i, 974.
- 4-Diethylaminophenylazomethine-5-acridine** (PORAI-KOSCHITZ, AUSCHKAP and AMSLER), 1911, A., i, 689.
- 2-Diethylamino-2-phenyldihydro-1:3-benzoxazine-4-one** and its hydrochloride (TITHERLEY and HUGHES), 1911, T., 1503.
- Diethylaminophenyldimethylpyrazolone**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1903, A., i, 866.
- Diethyl-*p*-aminophenyldinaphthaxanthene** (FOSSE), 1904, A., i, 337.
- α -Diethylamino- α -phenyl- Δ^a -hexen- δ -one** (ANDRÉ), 1911, A., i, 269.
- p*-Diethylaminophenyl-*p*-hydroxy-*m*-tolylamine** (CASSELLA & Co.), 1903, A., i, 860.
- 4-Diethylaminophenylimino-3-phenylisooxazolone** (MEYER), 1911, A., i, 687.
- Diethylaminophenyl-lactic acid**, diethylamide of (FOURNEAU), 1907, A., i, 623.
- 5-Diethylamino-1-phenyl-3-methylpyrazole-4-azobenzene** (MICHAELIS and KLOPSTOCK), 1907, A., i, 736.
- α -Diethylamino- α -phenyl- Δ^a -penten- γ -one** (ANDRÉ), 1911, A., i, 269.
- p*-Diethylaminophenyltartronic acid**, methyl and ethyl esters (GUYOT and MICHEL), 1909, A., i, 158.
- Diethyltetraaminophenyl-*o*-tolylmethane** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 519.
- Diethyl-*m*- and -*p*-aminophthalanil** (GRANDMOUGIN and LANG), 1909, A., i, 972.
- β -Diethylaminopropionic acid** and its ethyl ester and derivatives (FLÜRSCHHEIM), 1904, A., i, 19.
- α -Diethylaminopropionobetaine**, methiodide of (KLAGES and MARGOLINSKY), 1904, A., i, 145.
- Diethylaminopropyl benzoate** and its picate (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 266.
- Diethylaminoisopropyl benzoate** and its hydrochloride, oxalate, and picate (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 167.
- 2- β -Diethylaminopropylpyridine** and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 938.
- Diethyldiaminoquinoxaline** (HINSBERG and SCHWANTES), 1904, A., i, 200.
- p*-Diethylaminostyryl methyl ketone** (SACHS and MICHAELIS), 1906, A., i, 575.
- Diethylaminostyryl phenyl ketone** (ANDRÉ), 1911, A., i, 269.
- Diethylaminothiazine**, *d*-nitroisositroso-, and its salts (GNEHM and SCHINDLER), 1908, A., i, 110.

Diethyldiaminothymoquinone (FICHTER and GLASER), 1908, A., i, 660.

4-Diethylamino-*m*-toluic acid, and 5-iodo- (WHEELER and HOFFMAN), 1910, A., i, 666.

Diethylaminotrimethylcarbinol and its *p*-amino- and *p*-nitro-benzoates (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 924.

Diethylammonium hydrogen carbonate (FICHTER and BECKER), 1912, A., i, 16.

cyanide (PETERS), 1906, A., i, 817.

iridichloride (GUTBIER and LINDNER), 1909, A., ii, 1026.

and iridibromide (GUTBIER and RIESS), 1910, A., i, 97.

nitrite (RAY and RAKSHIT), 1912, T., 162; P., 41.

osmichloride (GUTBIER and MAISCH), 1911, A., i, 19.

platinibromide (GUTBIER and BAURIEDL), 1910, A., i, 12.

selenibromide (GUTBIER and GRÜNEWALD), 1912, A., i, 241.

telluri-bromide and -chloride (GUTBIER, FLURY, and MICHELER), 1911, A., i, 182.

tungstate (EKELEY), 1909, A., i, 556.

Diethylisomylecarbinol and its acetate (GRIGNARD), 1904, A., i, 213.

Diethylaniline, absorption spectrum of (PURVIS), 1910, T., 1551.

dihydrobromide (KAUFLE and KUNZ), 1909, A., i, 556.

and *p*-nitroso-, dihydrochlorides (KAUFLE and KUNZ), 1909, A., i, 137.

telluri-bromide and -chloride (GUTBIER, FLURY, and EWALD), 1912, A., i, 689.

Diethylaniline, *o*-amino-. See Diethyl-*o*-phenylenediamine.

m-amino-, condensation of aromatic aldehydes with, and *m*-nitro-, picate of (MOORE), 1910, A., i, 280.

bromo-derivatives and their perbromides and salts (FRIES), 1906, A., i, 649.

o-nitro-, and its salts (WEISSENBERGER), 1912, A., i, 690.

p-nitro- and *p*-nitroso-, isomorphism and miscibility of (JAEGER), 1905, A., ii, 514.

2:5- and 3:4-dinitro- and 2:4:5-trinitro- (VAN ROMBURGH), 1910, A., i, 19.

p-nitroso-, action of ethylene dibromide on (TORREY), 1906, A., i, 80.

***αδ*-Diethylanilinoadipic acid**, ethyl ester (LE SUEUR), 1909, T., 278.

Diethylanthraceneindandione (FREUND and FLEISCHER), 1910, A., i, 491.

Diethylanthraceneindandionic acid (FREUND and FLEISCHER), 1910, A., i, 491.

Diethylanthranelic acid and its additive salts (MEYER), 1904, A., i, 744.

Diethylauric bromide (POPE and GIBSON), T., 2063; P., 245.

5:5-Diethylbarbituric acid (*veronal*) (GEBRÜDER VON NIESSEN), 1903, A., i, 799.

preparation of (MERCK), 1906, A., i, 461; 1907, A., i, 253, 350, 1072; (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 538, 704; 1907, A., i, 1084; 1908, A., i, 292; (EINHORN), 1906, A., i, 538; 1908, A., i, 464; (AKTIENGESELLSCHAFT FÜR ANILINFABRIKATION), 1906, A., i, 704; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 894; 1907, A., i, 447; (TRAUBE), 1906, A., i, 894; (WOLFES), 1907, A., i, 350; (BOEHRINGER & SÖHNE), 1908, A., i, 464.

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as a narcotic (FISCHER and v. MERING), 1903, A., i, 552.

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pharmacology of (ROEMER; JACOB and ROEMER; JACOB), 1911, A., ii, 1120.

codeine salt (KNOLL & Co.), 1912, A., i, 210.

quinine salt (MERCK), 1912, A., i, 1013.

detection of poisoning by (G. and H. FRERICHs), 1906, A., ii, 379.

detection of (JORISSEN), 1911, A., ii, 670.

forensic detection of (HEIDUSCHKA), 1911, A., ii, 816.

estimation of, in urine (FISCHER and v. MERING), 1905, A., ii, 776.

5:5-Diethylbarbituric acid, 2-imino-, and its nitrate (MERCK), 1911, A., i, 1035.

4-imino- (*iminoveronal*), and its hydrochloride (CONRAD), 1905, A., i, 752; (CONRAD and ZART), 1905, A., i, 754.

***o*-Diethylbenzene**, *di-α*-hydroxy- (NELKEN and SIMONIS), 1908, A., i, 348.

- p*-Diethylbenzene, *di-a*-amino-, and the *i*-isomeride (BEREND and HERMS), 1906, A., i, 854.
- tetrahydroxy-, and its di- and tetraacetates and tetrabenzoate (FICHTER and WILLMANN), 1904, A., i, 678.
- Diethylbenzenylamidine, benzoyl derivative of, and its platinichloride (LANDER), 1903, T., 323; P., 16.
- s*-Diethylbenzidine and its diacyl derivatives and nitrosoamine (BAMBERGER and TICHWINSKY), 1903, A., i, 132.
- and its dinitrosoamine and diacetyl and dibenzoyl derivatives (TICHWINSKY), 1903, A., i, 442.
- liquid crystals of (ROTARSKI), 1908, A., i, 640.
- 2:5-Diethyl-*p*-benzoquinone, 3:6-dihydroxy-, and its diacetate and dibenzoate (FICHTER and WILLMANN), 1904, A., i, 678.
- hydrolysis of (FICHTER and KAPPELER), 1908, A., i, 660.
- 3:5-Diethyl-*p*-benzoquinone, and its oxime (HENDERSON and BOYD), 1910, T., 1664.
- 1:3-Diethylcyclobutan-2:4-dione-1:3-dicarboxylic acid, diethyl ester (STAUDINGER and BEREZA), 1910, A., i, 89.
- Diethylbutenylbenzene (RIIBER), 1903, A., i, 471.
- $\alpha\beta$ -Diethylbutyl alcohol (FOURNEAU and TIFFENEAU), 1907, A., i, 818.
- $\alpha\alpha$ -Diethyl-*n*-butyric acid, and its amide (HALLER and BAUER), 1909, A., i, 131.
- s*-Di- α -ethylbutyrylhydrazide (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 227.
- 1:3-Diethylcaffolide (BILTZ and TOPP), 1911, A., i, 693.
- Diethylcamphoformolaminocarboxylic acid, diethylamine salt (TINGLE and HOFFMANN), 1905, A., i, 800.
- Diethylcampholenol and its acetate and Diethylcampholandiene (BÉHAL), 1904, A., i, 514.
- Diethylcampholide (SHIBATA), 1910, T., 1241.
- Diethylapocampholide (SHIBATA), 1910, T., 1242.
- Diethyl- α -camphoramic acid (FREYLOU), 1908, A., i, 861.
- Diethylcarbamic acid, diethylammonium salt (FICHTER and BECKER), 1912, A., i, 16.
- esters (A. and L. LUMIÈRE and PERRIN), 1904, A., i, 559.
- Diethylcarbamic acid, amino-*o*-methoxyphenyl ester and its acetyl derivative and carbamide, and nitro-*o*-methoxyphenyl ester, and *p*-amino-phenyl ester and its acetyl derivative and carbamide, and *p*-nitrophenyl ester (A. and L. LUMIÈRE and PERRIN), 1905, A., i, 588.
- phenyl and *o*-tolyl esters (BOUCHETAL DE LA ROCHE), 1904, A., i, 152.
- 3:4-Diethylcarbonatobenzoic acid, and its acid chloride (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- 2-*mp*-Diethylcarbonatbenzoxylbenzoic acid, nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- Diethylcarbonatohexa-acetylgalloyl-leucodigallic acid (NIERENSTEIN), 1912, A., i, 471.
- 3:4-Diethylcarbonatphenylglyoxylonitrile (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- Diethylcetrol (HESSE), 1905, A., i, 139.
- Diethyl-*m*-chloroaminoazobenzene-*p*-sulphonic acid and its barium salt (GOLDSCHMIDT and KELLER), 1903, A., i, 135.
- s*-Diethyldichlorocarbamide (CHATTAWAY and WÜNSCH), 1909, T., 133.
- Diethylchloroisocyanine iodide (VON-GERICHTEN and HÖFCHEN), 1908, A., i, 914.
- Diethyl- β -chloroethylcarbinol (MAIRE), 1908, A., i, 247.
- 2:2-Diethyl-1:2-chromen (HOUBEN), 1904, A., i, 335.
- 1:1-Diethylcitronellol (AUSTERWEIL and COCHIN), 1910, A., i, 572.
- Diethylcreatinine platinichloride (HENZERLING), 1911, A., i, 21.
- Diethyleyanamide (TRAUBE and ENGELHARDT), 1911, A., i, 955.
- Diethyleyanine, diiodo- (MIETHE and BOOK), 1904, A., i, 777.
- Diethylisocyanine. See Ethyl-red.
- Diethyldiacetoneamine and corresponding alkamine (TRAUBE), 1909, A., i, 773.
- Diethyldiacetylacetone (BAIN), 1906, T., 1233; P., 196.
- $\alpha\beta$ -Diethyl- $\gamma\gamma$ -diallylbutyric acid, γ -hydroxy-, ethyl ester (REFORMATSKY), 1909, A., i, 4.
- 2:2'-Diethyl-1:1'-dianthraquinonyl (SCHOLL, POTTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- Diethyl- β -diethylaminoethylcarbinol (MAIRE), 1908, A., i, 248.
- s*-Diethyldiglycollic acid and its salts and imide (LOSSEN and SMELKUS), 1906, A., i, 60.

Diethyldihydroanthracene, *di*hydroxy- (CLARK), 1908, A., i, 331.

9:10-Diethyldihydroanthracene, 9:10-*di*hydroxy-, and its derivatives (CLARK and CARLETON), 1912, A., i, 29.

1:2-Diethyl-1:2-dihydrocinchonine (FREUND and MAYER), 1910, A., i, 132.

Diethylhydrodiquinolyl (EMMERT), 1909, A., i, 603.

9:10-Diethyldihydrophenanthrene, 9:10-*di*hydroxy-, and its oxide (ZINCKE and TROPP), 1908, A., i, 787.

Diethyl diketone (*dipropionyl*), new synthesis of (TSCHUGAEFF), 1907, A., i, 185.

4:4-Diethyldiphenyl (SCHREINER), 1910, A., i, 367.

Diethylsquinoxaline chloride and its derivatives (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), 1911, A., i, 328.

Diethylsquinoxaline chromate and picrate (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), 1911, A., i, 328.

Diethyldithiocodide and its methiodide (PSCHORR and KRECH), 1910, A., i, 422.

Diethyldithiomorphide (PSCHORR and HOPPE), 1910, A., i, 423.

Diethylene disulphide, *diamino*- (NEUBERG and ASCHER), 1906, A., i, 938.

Diethylenediamine. See Piperazine.

Diethylenediamine-chromium salts (PFEIFFER, KOCH, LANDO, and TRIESCHMANN), 1905, A., i, 34.

1:2-*dichloro*- (WERNER), 1911, A., i, 951.

Diethylenediaminecobaltic salts, *dichloro*-, *chloronitro*-, *nitroquo*-, and *nitrothiocyanato*- (WERNER), 1912, A., i, 10.

1:2- and 1:6-*dinitro*- (WERNER), 1911, A., i, 841.

Diethylenedipiperidinium chloride and picrate (KNORR, HÖRLEIN, and ROTH), 1905, A., i, 834.

Diethylenedipiperidyl bromide and iodide (v. BRAUN), 1907, A., i, 728.

Diethyleneglycol *monoperchlorate* (HOFMANN, ZEDTWITZ, and WAGNER), 1910, A., i, 3.

Diethylenesulphidemethylsulphine hydroxide, decomposition of, in aqueous solution (GREEN and SUTHERLAND), 1911, T., 1174; P., 140.

aa-Diethylethylene oxide (DALEBROUX and WUYTS), 1907, A., i, 106.

Diethylethylenedibarbitoric acid (WOLFF), 1911, A., i, 690.

Diethylethylenediparabanic acid (NÄGELE), 1912, A., i, 796.

Diethylethylenedithiodihydantoin (NÄGELE), 1912, A., i, 796.

Diethylethylenedithiodiparabanic acid (NÄGELE), 1912, A., i, 796.

Diethylfulvene (THIELE and BALHORN), 1906, A., i, 639.

1:1-Diethylgeraniol (AUSTERWEIL and COCHIN), 1910, A., i, 687.

αγ-Diethylglutaric acid, *β*-hydroxy-, and its ethyl ester, and acetyl derivative (BLAISE and LUTTRINGER), 1905, A., i, 506.

ββ-Diethylglycidic acid, ethyl ester (CLAINE), 1905, A., i, 288.

Diethylglycollamide (MANNICH and ZERNIK), 1908, A., i, 399.

C-Diethylglycolcyanamide (CLEMMENSEN and HEITMAN), 1908, A., i, 772.

C-Diethylglycolyl-carbamide and its salts and -thiocarbamide (CLEMMENSEN and HEITMAN), 1908, A., i, 771.

Diethylglyoximine, nickel derivative (TSCHUGAEFF), 1907, A., i, 185.

γ-Diethylheptan-*δ*-ol and its phenylurethane (ZERNER), 1911, A., i, 950.

1:3-Diethylcyclohexadiene (BLAISE and MAIRE), 1908, A., i, 391; (HENDERSON and BOYD), 1911, T., 2164; P., 277.

5:5-Diethylhexahydropyrimidine, 2:4:6-*triimino*- (MERCK), 1906, A., i, 537.

*d*iminocyanoinmino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 538.

5:5-Diethylhexahydro-2-pyrimidone, 4:6-*d*imino- (MERCK), 1906, A., i, 537, 715.

4:6-*d*imino-2-thio- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.

5:5-Diethylhexahydro-6-pyrimidone, 2:4-*d*imino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.

Di-ethyl- and -propyl-hexahydropyrimidones, iminocyanoinmino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 538.

3:6-Diethylhexahydro-1:2:4:5-tetrazine (RASSOW and BAUMANN), 1910, A., i, 79.

1:3-Diethylcyclohexan-5-ol (HENDERSON and BOYD), 1911, T., 2162, P., 277.

1:3-Diethylcyclohexene and its dibromide (HENDERSON and BOYD), 1911, T., 2163; P., 277.

Diethylhomorhodamine and its hydrochloride and acetyl derivative (NOELTING and DZIEWOŃSKI), 1905, A., i, 935.

Diethylhydantoin (ROSENMUND and HERMANN), 1912, A., i, 244.

1:3-Diethylhydantoin-5-carboxylic acid, 5-hydroxy-, lactamide of (BILTZ and TOPP), 1911, A., i, 693.

1:3-Diethylhydantoylamine, 5-hydroxy-, and its derivatives (BILTZ and TOPP), 1911, A., i, 693.

1:3-Diethylhydantoylcarbamide, 5-hydroxy- (BILTZ and TOPP), 1911, A., i, 693.

2:2-Diethylhydrindone (HALLER and BAUER), 1910, A., i, 490.

Diethylhydroxylamine and its salts (WIELAND), 1903, A., i, 686.

3:5-Diethylimino-1:1-dimethylcyclohexane and its platinichloride (HAAS), 1909, T., 422.

2:2-Diethylindan-1:3-dione, and its dioxime (FREUND and FLEISCHER), 1910, A., i, 490.

2:3-Diethylindole and its picrate (PADOA and CHIAVES), 1908, A., i, 105.

2:3-Diethylisindolinone, 3-hydroxy- (SACHS and LUDWIG), 1904, A., i, 267.

Diethylketen (STAUDINGER and OTT), 1908, A., i, 603.

Diethyl ketone (*propione*), condensation of, with hypophosphorous acid (MARIE), 1903, A., i, 678.

reaction of, with mercuric iodide in alkaline solution (MARSH and STRUTHERS), 1908, P., 267.

condensation of opianic and phthalaldehydic acids with (MORGENSTERN), 1909, A., i, 803.

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Diethyl ketone, β -mono- and $\alpha\beta$ -dibromo-, and β -chloro- and its reactions (MAIRE), 1908, A., i, 247.

tribromo- (PASTUREAU), 1909, A., i, 207.

β -chloro- (BLAISE and MAIRE), 1906, A., i, 142.

Diethyl ketone ammonia (THOMAE), 1905, A., i, 684.

Diethylmalonamic acid (EINHORN and v. DIESBACH), 1906, A., i, 398;

(TAFEL and THOMPSON), 1908, A., i, 58.

and its ethyl ester, anilide, and sulph-anilide (CONRAD and ZART), 1905, A., i, 755.

ethyl ester (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 903.

Diethylmalonamide (CONRAD and ZART), 1905, A., i, 754.

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P., 36.

Diethylmalonamide, *N*-diformyl derivative (EINHORN and SPRÖNGERTS), 1906, A., i, 249.

Diethylmalonanilic acid (CONRAD and ZART), 1905, A., i, 755.

Diethylmalondiethylamic acid (EINHORN and v. DIESBACH), 1906, A., i, 398.

Diethylmalonic acid, derivatives of (EINHORN), 1908, A., i, 314;

(STAUDINGER and OTT), 1908, A., i, 603.

anhydrides of (EINHORN and v. DIESBACH), 1906, A., i, 398.

diurethane of (TRAUBE), 1907, A., i, 396.

methyl ester (MEYER), 1906, A., i, 188.

ethyl and methyl esters, condensation of, with malonamide (REMFY), 1911, T., 619.

Diethylmalonic anhydride and semichloride (STAUDINGER and OTT), 1908, A., i, 603, 939.

Diethylmalonuramide (CONRAD and ZART), 1905, A., i, 754.

Diethylmalonylbenzidine (REMFY), 1911, T., 622.

Diethylmalonylcarbamide. See 5:5-Diethylbarbituric acid.

Diethylmalonylethylmalonamide (REMFY), 1911, T., 618.

5:5-Diethylmalonylguanidine (FISCHER and DILTHEY), 1905, A., i, 37;

(MERCK), 1905, A., i, 751.

4-imino- (CONRAD), 1905, A., i, 752.

Diethylmalonylmalonamide and its sodium salt (REMFY), 1911, T., 617.

Diethylmalonylmethylmalonamide (REMFY), 1911, T., 618.

Diethylmalonyl-*p*-phenetidine (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 497.

Diethylmalonylphenylaminoguanidine (EINHORN), 1906, A., i, 539; 1908, A., i, 315.

Diethylmalonylphenylguanidine (EINHORN), 1908, A., i, 315.

and *p*-chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 987.

Diethylmalonyltetra-methyl- and -ethyl-dicarbamides (EINHORN), 1908, A., i, 464.

5:5-Diethylmalonylthiocarbamide, 4-imino- (CONRAD), 1905, A., i, 752.

Diethylmalonylureide, methyl and ethyl esters (BOEHRINGER & SÖHNE), 1908, A., i, 464.

Diethylmesityl oxide (TRAUBE), 1909, A., i, 773.

- Diethylnaphthalene**, formation of (HOMER), 1907, T., 1107; P., 88.
- Diethylnarceine** methiodide (KNOLL & Co.), 1907, A., i, 1070.
- Diethylolivil** (KÖRNER and VANZETTI), 1912, A., i, 352.
- Diethylisoolivil** (KÖRNER and VANZETTI), 1912, A., i, 353.
- 2:6-Diethylolpiperidine**, and its derivatives (LÖFFLER and REMMLER), 1910, A., i, 634.
- 2:6-Diethylolpyridine**, and its salts (LÖFFLER and THIEL), 1909, A., i, 182.
- Diethyloxadiazole** (STOLLÉ and HILLE), 1904, A., i, 695.
- Diethyloxalacetic acid**, ethyl ester, and its phenylhydrazone (RASSOW and BAUER), 1909, A., i, 632.
- esters, synthesis of unsymmetrical (RASSOW and BAUER), 1909, A., i, 631.
- s-Diethyloxamide**, *N*-dibromo- and *N*-dichloro- (CHATTAWAY and LEWIS), 1906, T., 161; P., 18.
- as-Diethylpentamethylenediamine**, and its derivatives (v. BRAUN), 1910, A., i, 820.
- 1:1-Diethylcyclopentane**, and 2-bromo- (KIJNER and VOZNESENSKY), 1911, A., i, 968.
- 1:2-Diethyl- Δ^1 -cyclopentene** (KIJNER and AMOSOFF), 1911, A., i, 967.
- 1:1-Diethyl- Δ^2 -cyclopentene** and its derivatives (KIJNER and VOZNESENSKY), 1911, A., i, 968.
- 9:10-Diethylphenanthrene** (ZINCKE and TROPP), 1908, A., i, 787.
- and *aa*-di-chloro-, and *a*-hydroxy- (WILGERODT and ALBERT), 1911, A., i, 883.
- Diethylphenanthreneindandione** (FREUND and FLEISCHER), 1910, A., i, 491.
- Diethylphenanthreneindandionic acid** (FREUND and FLEISCHER), 1910, A., i, 491.
- Diethyl-*o*-phenylenediamine** and its salts (WEISSENBERGER), 1912, A., i, 690.
- as-Diethyl-*m*-phenylenediamine** picrate (MOORE), 1910, A., i, 281.
- Di-*p*-ethylphenyliodonium**, and iodo-, hydroxides and salts (WILGERODT and BERGDOLT), 1903, A., i, 745.
- 1:3-Diethylphthalan** (NELKEN and SIMONIS), 1908, A., i, 348.
- 1:3-Diethylphthalazone** (DAUBE), 1905, A., i, 210.
- Diethylphthalide** and nitro- (BAUER), 1904, A., i, 418.
- Diethylphthalide**, 5-amino-, and its acetyl derivative and platinichloride, 5-hydroxy-, and its benzoyl derivative and methyl ether, and 4:6-dinitro-5-hydroxy-, and its methyl ether (BAUER), 1908, A., i, 274.
- 5:6-di-bromo- (SIMONIS and ARAND), 1909, A., i, 933.
- 1:2-Diethylpiperidine**. See 1-Ethyl-2- β -bromo-, -chloro-, and -hydroxy-ethylpiperidines.
- 3:4-Diethylpiperidine** and its derivatives (KOENIGS and BERNHART), 1905, A., i, 825.
- Diethylpiperidinium salts** (v. BRAUN), 1908, A., i, 677.
- Diethylisopropenylcarbinol** (COURTOT), 1906, A., i, 926.
- Diethylpropionamide** (v. BRAUN), 1903, A., i, 611.
- aa*-Diethylpropyl alcohol**, γ -iodo-, synthesis of (DALEBROUX and WUYTS), 1907, A., i, 106.
- aa*-Diethylpropylene oxide** (DALEBROUX and WUYTS), 1907, A., i, 106.
- Diethylisopropylmethane**. See β -Methyl- γ -ethylpentane.
- 3:5-Diethyl-2-propylpyridine**, synthesis of (TSCHITSCHIBABIN), 1906, A., i, 452.
- Diethylprotocetraric acid** (HESSE), 1905, A., i, 139.
- 8:16-Diethylpyranthrone** (SCHOLL, POT-SCHWAUSCHEG and LENKO), 1911, A., i, 1008.
- 2:5-Diethylpyrazine** and its salts (KOLSHORN), 1904, A., i, 675.
- 3:4-Diethylpyridine** and its additive salts (KOENIGS and BERNHART), 1905, A., i, 824.
- Diethylpyruvic acid**, hydroxy-, ethyl ester (LEMAIRE), 1909, A., i, 200.
- 3:5-Diethylquinol** (HENDERSON and BOYD), 1910, T., 1665.
- Diethyl- ψ -quinol**, tetrabromo- (ZINCKE and BUFF), 1905, A., i, 882.
- Diethylreteneindandione** (FREUND and FLEISCHER), 1910, A., i, 492.
- s-Diethylrhodamine** and its hydrochloride and diacetyl derivative (NOELTING and DZIEWOŃSKI), 1905, A., i, 935.
- alkali salts of (WACKER), 1907, A., i, 726.
- 3:3-Diethylrubazonic acid** (WAHL and DOLL), 1912, A., i, 537.
- Diethylsilicone** (MARTIN and KIPPING), 1909, T., 313; P., 28.
- Diethylsphingosine** (RIESSER and THIERFELDER), 1912, A., i, 373.
- $\alpha\beta$ -Diethylsuccinic acid** (*hexanedicarboxylic acid*), phenyl ester (BISCHOFF and v. HEDENSTRÖM), 1903, A., i, 86.

- Diethylisosuccinic acid** and its ethyl ester and anilide (A. and L. LUMIÈRE and PERRIN), 1904, A., i, 369.
- Diethylsulphamic acid** and its ethyl ester (WILCOX), 1905, A., i, 46.
- Diethylsulphone**, β -amino-, and its salts (SCHNEIDER, MÜLLER, and BECK), 1912, A., i, 192.
- Diethyl sulphoxide hydroferrocyanide** (PUMMERER), 1910, A., i, 468.
- β -amino-, and its salts (SCHNEIDER, MÜLLER, and BECK), 1912, A., i, 192.
- 5:5-Diethyltetrahydropyrimidine-2:6-dione**, 4-dichloroamino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 444.
- Diethylthallium compounds** (MEYER and BERTHEIM), 1904, A., i, 656.
- Diethylthetine**, *l*-menthyl ester, salts of, molecular rotation of (SMILES), 1905, T., 453; P., 93.
- Diethylthiobarbituric acid** (MERCK), 1911, A., i, 683.
- reduction of (EINHORN and v. DIESBACH), 1908, A., i, 110.
- Diethylthiocarbamic acid**, methyl ester (BILLETER), 1910, A., i, 545.
- Diethylthiocarbamylglycollic acid** and its derivatives (HOLMBERG), 1912, A., i, 181.
- Diethylthiodiazole** (STOLLÉ and HILLE), 1904, A., i, 695.
- Diethylthioethylsulphonium dimercuric iodide** (HILDITCH and SMILES), 1907, T., 1397; P., 206.
- Diethylthioformamide** and its methiodide (WILLSTÄTTER and WIRTH), 1909, A., i, 460.
- Diethylthioglycollic acid**. See α -Thiol- α -ethylbutyric acid.
- $\beta\beta$ -Diethylthiohydantoin** (CLEMMENSEN and HEITMAN), 1908, A., i, 771.
- 1:5-Diethylthiolanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 751.
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- 4:8-Diethylthiolanthraquinone**, 1:5-diamino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 751.
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- 4:4-Diethyltrimethylenedicarbonimide-3:5-dicarboxylic acid** (GHIGLIENO), 1911, A., i, 321.
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- Dihexamethylenetetramine** cupric and cobalt thiocyanates (CALZOLARI), 1910, A., i, 614.
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- Dicyclohexanone**, semicarbazone of (HALLER and BAUER), 1911, A., i, 300.
- Dicyclohexanonecyanohydrin** (ULTÉE), 1909, A., i, 705.

- $\Delta^{1:1'}$ -Dicyclohexene** and its dihydrobromide (WALLACH and PAULY), 1911, A., i, 474.
- Di- Δ^1 -cyclohexeneacetic acid, α -cyano-, methyl ester** (HARDING, HAWORTH, and PERKIN), 1908, T., 1957.
- Diisohexenyl ketone** (isovalerylideneacetone) and its semicarbazide-semicarbazone (RUPE and HINTERLACH), 1908, A., i, 13.
- Dihexonoin** (BOUVEAULT and LOCQUIN), 1906, A., i, 783.
- Dihexoyl** and its dioxime (BOUVEAULT and LOCQUIN), 1905, A., i, 561, 573.
- Di-*d*-isohexoyl-*l*-cystine, α -bromo-** (FISCHER and GERNGROSS), 1909, A., i, 367.
- Dicyclohexyl** (BORSCHÉ and LANGE), 1905, A., i, 766; (WALLACH), 1907, A., i, 220; (HELL and SCHAAL), 1907, A., i, 1050.
preparation of (SABATIER and MURAT), 1912, A., i, 547.
as a cryoscopic solvent (MASCARELLI and VECCHIOTTI), 1910, A., ii, 1036.
- Dicyclohexyl, dinitro-** (NAMETKIN), 1910, A., i, 829.
- Diisohexylamine** and its salts (SABATIER and SENDERENS), 1905, A., i, 263.
- Dicyclohexylamine** and its salts and *N*-nitroso-derivative (WALLACH), 1906, A., i, 160.
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aurichloride (WILSTÄTTER and HATT), 1912, A., i, 545.
- Dicyclohexylcarbinol** (SABATIER and MAILHE), 1904, A., i, 810.
- Dicyclohexylethane** (FREUNDLER), 1906, A., i, 734.
- $\alpha\alpha$ - and $\alpha\beta$ -Dicyclohexylethanes** (SABATIER and MURAT), 1912, A., i, 617.
- Dicyclohexylhydrazine** and its hydrochloride (KIJNER and BELOFF), 1911, A., i, 678.
- Di-*n*-hexyl ketone *p*-nitrophenylhydrazone** (PICKARD and KENYON), 1912, T., 629.
- Dicyclohexyl ketone** (dodecahydrotetraphenone) (HELL and SCHAAL), 1907, A., i, 1049.
- Diisohexylparabanic acid** (KALUZA), 1910, A., i, 131.
- $\alpha\gamma$ -Dicyclohexylpropane** (FRÉZOULS), 1912, A., i, 629.
- Dicyclohexylpropanes**, four isomeric, preparation of (SABATIER and MURAT), 1912, A., i, 757.
- Diisohexylthiocarbamide** (KALUZA), 1910, A., i, 131.
- Diisohexylthioparabanic acid** (KALUZA), 1910, A., i, 131.
- Dihydrazides** of dibasic acids, condensation products of (BÜLOW and WEIDLICH), 1906, A., i, 981.
- Dihydrazines** (V. BRAUN), 1908, A., i, 700, 737; 1910, A., i, 524.
- pp'*-Dihydrazinodiphenylmethane** (FINGER and BAUMANN), 1906, A., i, 892.
and its derivatives (BORSCHÉ and KIENITZ), 1910, A., i, 782.
- 2:5-Dihydrazinotriazole**, 1-amino-, and its tribenzylidene derivative (STOLLÉ and BOWLES), 1908, A., i, 475.
- Dihydrindamine, δ hydroxy-,** and its resolution into active compounds, and their salts (POPE and READ), 1911, T., 2071; P., 259.
- Dihydroabietene** (EASTERFIELD and BAGLEY), 1904, T., 1247; P., 113.
- Dihydroanethole**, action of nitric acid on (THOMS and DRAUZBURG), 1911, A., i, 716.
- Dihydroanthracene, trihydroxy-,** and its acetyl derivative (TUTIN and CLEWER), 1911, T., 960; P., 90.
- 9:10-Dihydroanthracene, derivatives of** (CLARKE), 1908, A., i, 330.
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- 9:10-Dihydroanthracene, nitro-** (MEISENHEIMER and CONNERADE), 1904, A., i, 391.
- N*-Dihydroanthrahydroquinoneazine, tetra-acetyl derivative** (SCHOLL and BERBLINGER), 1907, A., i, 257.
- Dihydro-1-anthramine** and its hydrochloride (DIENEL), 1905, A., i, 768.
- Dihydroanthranol, 9-hydroxy-,** and its diacetyl derivatives (GODCHOT), 1907, A., i, 840, 841.
- N*-Dihydro-anthranol- and -anthranoneazines** (SCHOLL and BERBLINGER), 1904, A., i, 111.
- Dihydroanthranyl acetate, nitrate and nitrite, nitro-** (MEISENHEIMER and CONNERADE), 1904, A., i, 391.
- 1:2 1':2'-*N*-Dihydroanthraquinolanthranolazine** and its triacetyl derivative (SCHOLL and STEGMÜLLER), 1907, A., i, 354.
- N*-Dihydro-1:2:1':2'-anthraquinone-anthrahydroquinoneazine.** See Dihydroindanthren.
- N*-Dihydroanthraquinoneanthranolazine** and its hydrochloride and acetyl derivative (SCHOLL and STEGMÜLLER), 1907, A., i, 354.
- N*-Dihydro-1:2:1':2'-anthraquinoneazine.** See Indanthren.

- N*-Dihydro-1:2:1':2'-anthrazine (SCHOLL, BERBLINGER, and KÜNZEL), 1907, A., i, 354.
- Dihydroisocapiole, dibromo-, α -hydroxy-, and its acyl, methoxy-, and ethoxy-derivatives (POND and SIEGFRIED), 1903, A., i, 417.
- Dihydroarabinol (TUTIN and CLEWER), 1912, T., 295.
- Dihydroasarone (SZÉKI), 1906, A., i, 660.
- Dihydroazines (HINSBERG), 1909, A., i, 845.
- Dihydrobenzanthrene and bromo-, and dibromo- (BALLY, SCHOLL, and LENTZ), 1911, A., i, 677.
- identity of, with isochrysofluorene (SCHOLL and SEER), 1911, A., i, 626.
- Dihydrobenzanthrone (BALLY and SCHOLL), 1911, A., i, 676.
- Dihydrobenzenes. See cycloHexadienes.
- Dihydroisobenzofuran derivatives (GUYOT and CATEL), 1905, A., i, 226, 540; 1906, A., i, 761; 1907, A., i, 76.
- condensation of, into 9:10-substituted anthracene derivatives (GUYOT and CATEL), 1905, A., i, 516.
- 3:4-Dihydro-2:4-benzoxazine-1-one, 5:8-dichloro- (VILLIGER), 1909, A., i, 930.
- 5:6:7:8-tetrachloro- (VILLIGER and BLANGY), 1909, A., i, 922.
- Dihydro-2:4-benzoxazine-1-one-4-acetonitrile, 5:6-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 319.
- Dihydrobenzylidene-tanacetone and its amine and semicarbazone, and -tan-acetyl alcohol (SEMMLER), 1904, A., i, 177.
- Dihydroberberine and its methiodide (GADAMER), 1911, A., i, 152.
- a new series of bases from (FREUND and BECK), 1905, A., i, 151.
- Dihydrobixin and its methyl ether (VAN HASSELT), 1909, A., i, 598; 1911, A., i, 552.
- Dihydroisobixin (VAN HASSELT), 1909, A., i, 599; 1911, A., i, 552.
- Dihydrobom bicesterol and its acetyl derivative (MENOZZI and MORESCHI), 1910, A., i, 254.
- Dihydrobornylene (HENDERSON and POLLOCK), 1910, T., 1620; P., 204.
- Dihydrobrazilinic acid, lactone of, synthesis of (PERKIN and ROBINSON), 1907, P., 291; 1908, T., 489; P., 54.
- Dihydrobrucine (SKITA and FRANCK), 1911, A., i, 1017.
- Dihydrobrucinic acid (LEUCHS), 1908, A., i, 563.
- Dihydrocaffeic acid (GORTER), 1911, A., i, 222.
- Dihydrocaffeic acid, β -amino- (POSNER), 1912, A., i, 455.
- Dihydrocamphene. See Camphane.
- Dihydrocamphoeenic acid and its amide (SEMMLER), 1906, A., i, 682.
- r*-Dihydrocampholene, α -amino-, and its oxamide, picrate, and carbamide (BLANC and DESFONTAINES), 1903, A., i, 565.
- Dihydrocampholenesultonecarboxylic acid, bromo-, and its methyl and ethyl esters (HARVEY and LAPWORTH), 1903, T., 1110; P., 148.
- Dihydro- β -campholene trimethylammonium hydroxide, iodide, and platinum-chloride (BOUVEAULT and BLANC), 1903, A., i, 613.
- Dihydrocampholenic acid chloride (BOUVEAULT and LEVALLOIS), 1909, A., i, 497.
- r*- α -Dihydrocampholenic acid and its amide (BLANC and DESFONTAINES), 1903, A., i, 565.
- Dihydro- β -campholyl alcohol and its chloride, pyruvate, and semicarbazone (BLANC), 1906, A., i, 174.
- Dihydrocampholytic acid, amino-, derivatives of, and *trans*-hydroxy- (NOYES and POTTER), 1912, A., i, 786.
- l*-hydroxy- (NOYES and KNIGHT), 1911, A., i, 111.
- Dihydro- β -campholytic acid, dibromo-, esters (PERKIN), 1903, T., 860.
- iso*-Dihydrocampholytic acid, amino-, and its derivatives (NOYES and KNIGHT), 1911, A., i, 111.
- Dihydrocamphoric acid, synthesis of (BLANC), 1906, A., i, 64.
- r*-Dihydrocamphoric acid, synthesis of (BOUVEAULT and LOCQUIN), 1908, A., i, 172.
- r*-*cis*-Dihydrocamphoric acid (BLANC), 1905, A., i, 683.
- Dihydrocamphorone and its oxime and semicarbazone (SEMMLER), 1904, A., i, 261.
- Dihydrocamphorophorone. See 1-Methyl-3-isopropyl-2-cyclopentanone.
- Dihydrocamphoryl alcohol and its acetate and phenylurethane (SEMMLER), 1904, A., i, 260.
- Dihydro- α -camphylic acid, trihydroxy-, and its salts and monoacetate (PERKIN), 1903, T., 855.
- Dihydro- α - and - β -camphylic acids, bromio-derivatives (PERKIN), 1903, T., 840.

- Dihydrocarbazole** and its nitroso-derivative and picrate (SCHMIDT and SCHALL), 1907, A., i, 792.
- Dihydrocarbostyryl- γ -carboxylic acid** (FICHTER and WALTER), 1910, A., i, 29.
- Dihydrocarlina oxide.** See α -Phenyl- γ -2-furyl- Δ^{α} -propene.
- Dihydrocarvenene** (Δ^2 -tetrahydrocymene) (SEMMLER), 1909, A., i, 171.
- i- and dd-Dihydrocarvenolic acids** and their derivatives (WALLACH), 1912, A., i, 878.
- Dihydrocarvenolide** (WALLACH), 1911, A., i, 471.
- Dihydrocarveol**, isomeric, and their derivatives (TSCHUGAEFF), 1905, A., i, 71.
- Dihydrocarveol xanthate** and its amide (TSCHUGAEFF), 1908, A., i, 93.
- Dihydrocarvestrenol** (Δ^1 -m-menthenol-8), synthesis of (PERKIN and TATTERSALL), 1906, P., 269; 1907, T., 498. magnetic rotation, refractive power, and dispersion of (PERKIN), 1907, T., 498.
- α -Dihydrocarvestrenol** (PERKIN), 1910, P., 97.
- Dihydroisocarvestrenol** (Δ^6 -m-menthenol-8) and its nitrosochloride, synthesis of (FISHER and PERKIN), 1908, T., 1887; P., 228.
- Dihydrocarvone**, action of light on (CIAMICIAN and SILBER), 1908, A., i, 555.
- action of magnesium methyl haloids on (RUPE and EMMERICH), 1908, A., i, 433.
- action of nitric acid on (KONOWALOFF), 1904, A., i, 258.
- Dihydrocarvone**, cyano-, and its reactions and its oxime, phenylhydrazone, semicarbazone, and isomeric dibromides (LAPWORTH), 1906, T., 945; P., 164.
- interaction of, with amyl nitrite and sodium ethoxide (LAPWORTH and WECHSLER), 1907, T., 977, 1919; P., 137, 252.
- cyanohydrin of, and its hydrolysis, and halogen haloids of (LAPWORTH), 1906, T., 1822; P., 285.
- neocyano-, and its derivatives (LAPWORTH and STEELE), 1911, T., 1877; P., 240.
- 8:9-Dihydrocarvone**, 8-hydroxy-. See Carvone hydrate.
- Dihydrocarvone hydrate** (8-hydroxy-menthan-2-one) and its semicarbazone (KNOEVENAGEL and SAMEL), 1906, A., i, 297.
- Dihydrocarvonecarboxylamide**, β -cyano- (LAPWORTH and STEELE), 1911, T., 1881.
- Dihydrocarvonecarboxylic acids**, isomeric, and their oximes, phenylhydrazones, and semicarbazones, and their oxidation (LAPWORTH), 1906, T., 959; P., 164.
- Dihydrocarvonyl-acetic acid** and -cyanoacetic acid, ethyl ester, and its oxime (KNOEVENAGEL and MOTTEK), 1905, A., i, 61.
- Dihydrocarvonylacetoacetic acid**, ethyl ester (RABE and WEILINGER), 1904, A., i, 509.
- Dihydrocarvoxide** and its dibromide (SEMMLER), 1903, A., i, 353.
- Dihydrocarvylamine** and its hydrochloride (MORRELL), 1911, A., i, 914.
- new *p*-menthadiene from (HARRIES), 1903, A., i, 743.
- Dihydrocaryophyllene** (DEUSSEN and VIELITZ), 1912, A., i, 368.
- Dihydroisocaryophyllene** (SEMMLER), 1903, A., i, 505.
- Dihydrocedrene** and **Dihydroisocedrol** (SEMMLER and HOFFMANN), 1907, A., i, 947.
- Dihydrocedrenes** (SEMMLER and MAYER), 1912, A., i, 480.
- Dihydrochaulmoogric acid** and its bromo-derivatives and their esters, and dihydroxy- (POWER and GORNALL), 1904, T., 855; P., 136.
- preparation of, and its ethyl ester (BARROWCLIFF and POWER), 1907, T., 575.
- Dihydrochaulmoogric acid**, bromo-, ethyl ester, and its reduction (BARROWCLIFF and POWER), 1907, T., 574.
- α - and β -dihydroxy- (BARROWCLIFF and POWER), 1907, T., 565; P., 70.
- Dihydrocholesterol** (*cholestanol*) (NEUBERG), 1906, A., i, 356.
- and its acetate (WILLSTÄTTER and MAYER), 1908, A., i, 636.
- Dihydrocholesteryl butyrate**, anisotropic liquid phases of, and the question as to the necessary presence of an ethylene double linking for the occurrence of these phenomena (JAEGER), 1907, A., ii, 441.
- Dihydrocinnamenylcarbamic acid**, menthyl ester (FORSTER and STÖTTER), 1911, T., 1339.
- Dihydrocinnamenylcarbimide** (β -phenyl-ethyl isocyanate) (FORSTER and STÖTTER), 1911, T., 1337; P., 206.

Dihydrocinnamenylphenylcarbamide (FORSTER and STÖTTER), 1911, T., 1338.

s-Dihydrocinnamenylphenylsemicarbazide (FORSTER and STÖTTER), 1911, T., 1338.

Dihydrocinnamhydroxamoxime hydrate, β -hydroxylamino-. See γ -Phenylpropyl alcohol, trihydroxylamino-.

Dihydrocinnamyl alcohol. See β -Phenylpropyl alcohol.

Dihydrocinnamylidenecetic acids, isomeric, formation of (RIIBER), 1905, A., i, 777.

$\alpha\beta$ -Dihydrocinnamylidene-acetic and -malonic acids (ERLENMEYER and KREUTZ), 1905, A., i, 897.

Dihydrocinnamylidenefluorenes, $\Delta\alpha$ - and $\Delta\beta$ -, and their dibromides (THIELE and HENLE), 1906, A., i, 573.

Dihydrocodeine (SKITA and FRANCK), 1911, A., i, 1017.

Dihydrocoumaric acid, benzoyl- β -amino- (POSNER), 1909, A., i, 583.

Dihydrocoumarin, diacetyl- β -amino- (POSNER), 1909, A., i, 583.

Dihydrocoumarohydroxamoxime hydroxide, β -hydroxylamino- (POSNER), 1909, A., i, 583.

Dihydrocumin aldehyde (SCHIMMEL & Co.), 1905, A., i, 536.

and its derivatives (FRANCESCONI and SERNAGIOTTO), 1912, A., i, 38.

and its semicarbazone and semioxamazone (WALBAUM and HÜTHIG), 1905, A., i, 604; (WALLACH), 1905, A., i, 709.

Dihydrocuminic acid and its bromides (SCHIMMEL & Co.), 1905, A., i, 536; (WALBAUM and HÜTHIG), 1905, A., i, 604; (WALLACH), 1905, A., i, 709.

Dihydro-p-cuminic acid, diamino-, and dinitro-, and its alkali salts and methyl ester (DITMAR), 1904, A., i, 757.

Dihydrocuminol and its derivatives from ginger grass oil (WALBAUM and HÜTHIG), 1905, A., i, 53, 603.

Dihydrocuminyl alcohol in bergamot oil (ELZE), 1910, A., i, 495.

Dihydrocuminyl α -naphthylcarbamate (SCHIMMEL & Co.), 1907, A., i, 67.

Dihydro-m-cymene (HARRIES and ANTONI), 1903, A., i, 615.

Dihydrodicamphene (FERNÁNDEZ), 1910, A., i, 400.

6:13-Dihydrodinaphthantracene (W.H. and M. MILLS), 1912, T., 2204; P., 243.

Dihydrodicyclopentadiene, amino- and chloroamino-, and their additive salts (WIELAND), 1906, A., i, 418. nitro-, nitrite of, nitrohydroxy-, and its sodium salt, and 4-nitrol and nitroisositroso- (RULE), 1908, T., 1561; P., 175.

Dihydrodicycloeksantalane (SEMMLER), 1908, A., i, 434.

Dihydroeksantallic acid (SEMMLER), 1910, A., i, 495.

Dihydrodicyclo-eksantallic acid and its methyl ester and -eksantalol (SEMMLER and BODE), 1907, A., i, 433.

Dihydroeksantalol (SEMMLER), 1910, A., i, 495.

Dihydroeksantalyl chloride (SEMMLER), 1908, A., i, 434.

Dihydroeucarvone, derivatives of (RUPE and KERKOVIVUS), 1911, A., i, 848.

Dihydrofencholinaldehyde and its semicarbazone (SEMMLER), 1906, A., i, 681.

Dihydro- α -fencholenamide (WALLACH and MEYER), 1911, A., i, 471.

Dihydrofencholenamides, carbamides of (BOUEVAULT and LEVALLOIS), 1909, A., i, 596.

Dihydrofencholenic acid and its esters and amide and isomeride (SEMMLER), 1906, A., i, 681.

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Dihydrofencholenic acid, hydroxy-, and its salts (SEMMLER and BARTELT), 1907, A., i, 11, 227.

dihydroxy- (WALLACH and WIENHAUS), 1911, A., i, 312.

α -Dihydrofencholenic acid (WALLACH and POHLE), 1911, A., i, 471.

Dihydrofencholenyl alcohol and its acyl derivatives and isomeride (SEMMLER), 1906, A., i, 681.

Dihydrofenchonitrile, dihydroxy-, and its derivatives (WALLACH and WIENHAUS), 1911, A., i, 312.

Dihydro- α -fenchonitrile (WALLACH and MEYER), 1911, A., i, 471.

Dihydroferulic acid, β -amino- (POSNER), 1912, A., i, 456.

Dihydroflavanthren and its hydrate, hydrochloride, and *o*-benzoyl derivative (SCHOLL and HOLDERMANN), 1908, A., i, 696.

Dihydroflavaspidic acid, methyl and ethyl ethers (BOEHM), 1904, A., i, 407, 408.

Dihydroflavaspidylxanthen and its ethers (BOEHM), 1904, A., i, 407, 408.

- 2:5-Dihydrofuran-2:5-dicarboxylic acid**, amides and chloride of (FISCHER, HESS, and STAHLSCHEIDT), 1912, A., i, 901.
optical isomerides of, and their salts (HILLE and RUSSE), 1904, A., i, 681.
- Dihydroguaiene** (GANDURIN), 1909, A., i, 98.
- Dihydrogyrilone** (GABRIEL), 1911, A., i, 229.
- Dihydrohæmatoxylinic acid**, lactone of, synthesis of (PERKIN and ROBINSON), 1907, P., 291; 1908, T., 489; P., 54.
- Dihydroapoharmine methiodide** (HASENFRATZ), 1912, A., i, 797.
picrate (FISCHER and BUCK), 1905, A., i, 229.
- Dihydrohemichlorogenic acid** and its penta-acetate (GORTER), 1911, A., i, 222.
- Dihydrohydrastinines** and their salts (FREUND and SHIBATA), 1912, A., i, 488.
- Dihydroindanthren**, disodium and dibenzoyl derivatives of (SCHOLL, STEINKOPF, and KABACZNIK), 1907, A., i, 256.
- Dihydroindole**, preparation and derivatives of (v. BRAUN and SOBECKI), 1911, A., i, 747.
- Dihydroisindole**, cyano- (v. BRAUN), 1910, A., i, 506.
- Dihydro-*p*-indole** and its salts and derivatives (v. BRAUN and GAWRILOW), 1912, A., i, 498.
- Dihydroisindolecarboxylamide** (v. BRAUN), 1910, A., i, 506.
- O*-*N*-Dihydro-2:9-indoloanthrone** (SCHOLL and v. WOŁODKOWITSCH), 1911, A., i, 889.
- Dihydrolauro lactone**. See Campholactone.
- Dihydrolaurole and Dihydroisolaurole**, supposed identity of, with 1:1-dimethylhexahydrobenzene (CROSSLEY and RENOUE), 1905, P., 303; 1906, T., 26.
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- Dihydroisolaurole**, constitution of (CROSSLEY and RENOUE), 1906, T., 30.
- Dihydroisolauronic acid**, isomeride of (BLANC), 1905, A., i, 681.
- Dihydrolauronic acid** (NOYES and BURKE), 1912, A., i, 159.
- Dihydrolimonene** (SEMMLER), 1903, A., i, 505.
and its salts (VAVON), 1911, A., i, 657.
- Dihydromentenphenylsulphone** (POSNER and TSCHARNO), 1905, A., i, 279.
- Dihydromeroquinene**, hydroxy- (KÖNIGS, BERNHART, and IBELE), 1906, A., i, 764.
- Dihydrometanicoline**. See Methyl- δ -3-pyridylbutylamine.
- 2:3-Dihydro-3-methylindene-2-carboxylic acid**. See 3-Methyl-2:3-dihydroindene-2-carboxylic acid.
- Dihydromethylindole**. See Methyl-dihydroindole.
- Dihydro- α -methylmorphimethine methyl ether**, bromohydroxy-, and its acetyl derivative (PSCHORR, DICKHÄUSER, and D'AVIS), 1912, A., i, 720.
- Dihydromorphine** and its sulphate and hydrochloride (OLDENBERG), 1911, A., i, 668.
- $\Delta\beta\gamma$ -Dihydromuconic acid** and its ethyl ester (SILBERRAD), 1904, T., 612; P., 61.
- cyclo*Dihydromyrcene**, synthesis and structure of (TIFFENEAU), 1908, A., i, 500.
- Dihydromyristicin** and *di*bromo- (RICHTER), 1907, A., i, 523.
- Dihydroisomyristicin**, β -bromo- α -hydroxy (SCANDOLA), 1912, A., i, 196.
- Dihydromyrtene acid** (SEMMLER and BARTELT), 1907, A., i, 430.
- 1:4-Dihydronaphthalene**, absorption spectrum of (LEONARD), 1910, T., 1246; P., 143.
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- Dihydro-1':2'-naphthaquinoxaline**, 2-hydroxy- (LANGE), 1908, A., i, 839.
- Δ^1 -Dihydro-1-naphthoic acid**, menthyl ester, and its rotation (RUPE, LOTZ, and SILBERBERG), 1903, A., i, 566.
- Δ^2 -Dihydro-1-naphthoic acid**, the relative catalytic effect of bases on the compounds of (PICKARD and YATES), 1906, T., 1484; P., 244.
menthyl ester, and its rotation (RUPE and SILBERBERG), 1903, A., i, 567.
- d*- Δ^2 (or Δ^3)-Dihydro-1-naphthoic acid** and its salts, esters, and *p*-toluidide, and molecular transformation (PICKARD and NEVILLE), 1905, T., 1763; P., 257.
- Δ^2 - and Δ^3 -Dihydro-2-naphthoic acid**, menthyl esters (RUPE and MÜNTER), 1910, A., i, 398.
- Δ^3 -Dihydro-2-naphthoic acid**, resolution of, and *d*-, and its *l*-menthylamine and sodium salts (PICKARD and YATES), 1909, T., 1014; P., 152.

- Dihydro-*m*-nitrophenylphenylpyrimid-one.** See Diphenyldihydropyrimidone, *m*-nitro-.
- Dihydronorbixin** (VAN HASSELT), 1909, A., i, 599; 1911, A., i, 552.
- Dihydro-ocimene**, formula of, and its dibromide (ENKLAAR), 1906, A., i, 377.
tetrabromide (ENKLAAR), 1908, A., i, 664.
ozonide (ENKLAAR), 1909, A., i, 111.
- Dihydro-orexine**, acylation of (HELLER and KÜHN), 1904, A., i, 943.
- Dihydro-oxadiazoles**, formation of, from hydrazine derivatives (STOLLÉ), 1904, A., i, 102.
- β -Dihydro-oxanthranol** (GODCHOT), 1907, A., i, 836.
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- 4:5-Dihydroisooxazole**, 5-imino-4-oximino-3-hydroxy- (WIELAND and BAUMANN), 1912, A., i, 839.
- Dihydro-oxotriazine**, isonitroso-, and its hydrochloride (WIELAND and HESS), 1909, A., i, 883.
- 1:2-Dihydropapaverine** and its hydrochloride (PYMAN), 1909, T., 1620; P., 217.
- 3:4-Dihydropapaverine** and its methochloride (PICTET and FINKELSTEIN), 1909, A., i, 323.
- 1:2-Dihydropapaveroline** and its hydrochloride (PYMAN), 1909, T., 1622.
- Dihydroperillic acid** and its methyl ester and dibromide (SEMMLER and ZAAR), 1911, A., i, 218.
- Dihydroperillyl alcohol** (SEMMLER and ZAAR), 1911, A., i, 218.
- Dihydro-2-perimidone**, and 2-thio- (SACHS), 1909, A., i, 431.
- Dihydrophellandrene** (SEMMLER), 1903, A., i, 505.
- Dihydrophenanthranil**, hydroxy-, and its acetyl derivative (JAPP and KNOX), 1905, T., 682.
- Dihydrophenanthraphenazoxine**, hydroxy- (KEHRMANN), 1905, A., i, 930.
- 9:10-Dihydrophenanthrene** and its picrate (SCHMIDT and MEZGER), 1907, A., i, 1023.
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- Dihydrophenazine** and its mono- and diacetyl derivatives (STSCHERBINA; TICHWINSKY), 1907, A., i, 353.
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- Dihydrophenazine**, acetylation of (TICHWINSKY), 1905, A., i, 383; (HINSBERG), 1905, A., i, 840.
- $\Delta^{1:5}$ -Dihydrophenol.** See Δ^2 -cycloHexanone.
- Dihydroisophorol** (SKITA and PAAL), 1911, A., i, 449.
- Dihydrophorone** and its semicarbazone (PAAL), 1912, A., i, 703.
- Dihydroisophoronecarboxylic acid** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1903, A., i, 502.
ethyl ester and its isomeride and oxime (SKITA), 1907, A., i, 1041.
- Dihydroisophoronecarboxylic acids** (*ketodihydrocyclogeranic acids*), stereoisomeric (MERLING, WELDE, and SKITA), 1905, A., i, 349.
- Dihydroisophoronecyanohydrin** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1903, A., i, 627.
- Dihydroisophorylcarboxylic acids**, and amides, *cis*- and *trans*-hydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1903, A., i, 627.
- Dihydrophthalic acid**, optically active (NEVILLE), 1906, T., 1744; P., 274.
- Dihydroisophthalic acid** (PERKIN and PICKLES), 1905, T., 310; P., 76; (GOODWIN and PERKIN), 1905, T., 853; P., 187.
- $\Delta^{1:3}$ -Dihydrophthalic anhydride** (ABATI and DE BERNARDINIS), 1905, A., i, 600.
affinity constants of (ABATI), 1906, A., i, 959.
- Dihydrophthalic anhydrides**, $\Delta^{1:3}$ - and $\Delta^{2:6}$ -, transformation of, by heat (ABATI and CONTALDI), 1906, A., i, 959.
- Dihydrophytol** (WILLSTÄTTER and MAYER), 1908, A., i, 383.
- Dihydrophytostene** and **Dihydrophytosterol** and its chloride (WINDAUS and HAUTH), 1907, A., i, 921.
- Dihydrophytosterol** and its acetate (MENOZZI and MORESCHI), 1910, A., i, 318.
- Dihydropinenecarbitronic acid** and its salts (HOUBEN and DOESCHER), 1906, A., i, 970.
- Dihydropinenecarboxylic acid** and its salts and anhydride (HOUBEN), 1906, A., i, 21.
- Dihydropinenesulphinic acid** and its sodium salt (HOUBEN and DOESCHER), 1906, A., i, 970.
- Dihydropinol** (RUPE and SCHLOCHOFF), 1905, A., i, 450.
- Dihydropinolol** (WALLACH), 1911, A., i, 891.

- Dihdropinolone**, constitution, synthesis, and derivatives of (WALLACH), 1911, A., i, 891.
- Dihdropinylamine** (*pinocampthylamine*), preparation and properties of, and its salts, acyl derivative, and carbamide (TILDEN and SHEPHEARD), 1906, T., 1560; P., 255.
- d-Dihdropulegenamide** (WALLACH), 1912, A., i, 878.
- Dihdropulegene** (1-methyl-3-isopropyl-cyclopentane) (WALLACH and MEYER), 1912, A., i, 878.
- Dihdropulegone** (*dihdropulegenone*). See 1-Methyl-3-isopropyl-2-cyclopentanone.
- 4:5-Dihdropyrazole-3:4:5-tricarboxylic acid**, ethyl ester (SILBERRAD and ROY), 1906, T., 179; P., 15.
- Dihdropyridine**, synthesis of, Hantzsch's, and its extension (KNOEVENAGEL, ERLER, and REINECKE), 1903, A., i, 651.
- 1:4-Dihdropyridine-4:4-dicarboxylic acid**, 2:6-dihydroxy-, ethyl ester and its metallic derivatives (ZWERGER), 1904, A., i, 91.
- Dihydro-2-pyrimidone**, 6-amino-derivatives and their hydrochlorides (JOHNSON, JOHNS, and HEYL), 1906, A., i, 771.
- 4:6-diamino-, and 4-chloro-6-amino- (WHEELER and JAMIESON), 1904, A., i, 941.
- 5:6-diamino-, and its additive salts, and 5-nitro-6-phenylcarbamido- (JOHNSON, JOHNS, and HEYL), 1906, A., i, 771.
- salts of (JOHNS), 1911, A., i, 242.
- 4-chloro-5-bromo-6-amino- (JOHNSON and JOHNS), 1905, A., i, 838.
- Dihydro-6-pyrimidone** and its acetyl derivative and salts (WHEELER), 1907, A., i, 879.
- picrolonate of (WHEELER and JAMIESON), 1908, A., i, 253.
- Dihydro-6-pyrimidone-2:5-diamino-**, and its additive salts and benzoyl derivative, and 5-nitro-2-amino- (JOHNSON and JOHNS), 1906, A., i, 113.
- 2:4:5-triamino-, 5-succinyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 79.
- Dihydro-6-pyrimidone-5-acetamide**, 2-amino- (JOHNSON and SPEH), 1907, A., i, 1084.
- Dihydro-6-pyrimidone-2-thiolacetic acid** and its ethyl ester (WHEELER and LIDDLE), 1909, A., i, 61.
- 1:6-Dihydro-6-pyrimidone-2- α -thiol- β -hydroxyacrylic acid**, ethyl ester (JOHNSON and SHEPARD), 1911, A., i, 924.
- 1:6-Dihydro-6-pyrimidone-2-thioxalyl-acetic acid**, diethyl ester (JOHNSON and SHEPARD), 1911, A., i, 924.
- 1:6-Dihydro-6-pyrimidone-2-thiolpyruvic acid** (JOHNSON and SHEPARD), 1911, A., i, 924.
- Dihydropyrococline** and its compound with mercuric chloride (SCHOLTZ), 1912, A., i, 386.
- Dihydropyruvic ureide** and dimethyl-ureide (GABRIEL), 1906, A., i, 635.
- Dihydroquinacridine** and its hydrochloride (ULLMANN and MAAß), 1907, A., i, 640.
- Dihydroquinaldine bases** (HELLER and SCHMEJA), 1911, A., i, 747.
- Dihydroquinazoline** (GABRIEL), 1903, A., i, 445.
- Dihydroquinazolines** (BOGERT and BEAL), 1912, A., i, 393; (BOGERT and GEIGER), 1912, A., i, 395.
- Dihydroquinazolinebenzoic acid**, hydrochloride and barium salt (GABRIEL), 1912, A., i, 392.
- Dihydroquinazolinepropionic acid** and its hydrochloride and barium salt (GABRIEL), 1912, A., i, 392.
- Dihydro-4-quinazalone**, amino-, bromo-, and nitro- (BOGERT and GEIGER), 1912, A., i, 396.
- 3-amino- (THODE), 1904, A., i, 348.
- 5-amino-, and its acyl derivatives, additive salts and dibromo- (BOGERT and CHAMBERS), 1906, A., i, 388.
- 6:8-dibromo-, and its 2-alkyl derivatives, synthesis of (BOGERT and HAND), 1904, A., i, 109.
- 5-nitro-, and its additive salts (BOGERT and CHAMBERS), 1905, A., i, 613.
- Dihydro-4-quinazolones**, 5-nitro-, synthesis of, from 6-nitro-acetylthranil and primary amines (BOGERT and CHAMBERS), 1905, A., i, 612; (BOGERT and SEIL), 1905, A., i, 945.
- 1:4-Dihydro-4-quinolone-2-carboxylic acid** (HELLER and SOURLIS), 1908, A., i, 913.
- Dihydro-4-quinazolone-6- and -7-carboxylic acids** and their alkyl and aryl derivatives (BOGERT, WIGGIN, and SINCLAIR), 1907, A., i, 351.
- 5:13-Dihydroquinodoline** (FICHTER and ROHNER), 1911, A., i, 86.
- Dihydroquinizarin-6(1)-sulphonic acid** (FRIEDLÄNDER and SCHICK), 1904, A., i, 679.

- Dihydroisoquinoline** derivatives, new synthesis of (DECKER and KROPP), 1909, A., i, 513.
- Dihydroisoquinoline-2-carboxyphenylethylamide** and its salts (DECKER), 1912, A., i, 581.
- Dihydroquinoline-dihydroquinoline-(3:3)-spiran**, 2-hydroxy- (RADULESCU), 1911, A., i, 498.
- Dihydroquinolones**, action of alkalis on (DECKER, ELIASBERG, and WISLOKI), 1903, A., i, 718.
- 1:2-Dihydroquinoxaline**, 3-hydroxy-, and its derivatives (MOTYLEWSKI), 1908, A., i, 370.
- 1:4-Dihydroquinoxaline**, a second (EKELEY), 1906, A., i, 459.
- Dihydroquinoxalines**, new series of (EKELEY and WELLS), 1905, A., i, 613.
- 2-hydroxy-, preparation of (LANGE), 1908, A., i, 839.
- Dihydroresorcinol**, action of phosphorus haloids on (CROSSLEY and HAAS), 1903, T., 494; P., 75.
- hydrobromide and hydrochloride (CROSSLEY and HAAS), 1903, T., 499.
- Dihydroresorcinols**, acyl derivatives of (CROSSLEY and RENOUF), 1912, T., 1524; P., 223.
- O*- and *C*-carbanilides of (DIECKMANN, HOPPE, and STEIN), 1905, A., i, 135.
- Dihydrosabinene** (WALLACH), 1912, A., i, 202.
- Dihydrosafrole**, 6-*mono*- and 2:6-*di*-amino-, and their acyl derivatives, 6-hydroxy-, 6-*mono*- and 2:6-*di*-nitro-, and 6-nitro-2-amino- (THOMS and BILTZ), 1904, A., i, 399.
- dichloro*- (DELANGE), 1904, A., i, 313.
- Dihydroisosafrole**, *tribromo*- (HOERING), 1907, A., i, 412.
- β -bromo- α -hydroxy-, and *di*- and *tri*-bromo- β -hydroxy- (HOERING), 1905, A., i, 903, 904.
- di*bromo- α -hydroxy-, and its acyl, methoxy-, and ethoxy-derivatives (POND and SIEGFRIED), 1903, A., i, 417.
- chloro*-, and its compound with pyridine (MAMELI), 1904, A., i, 1023.
- $\alpha\beta\omega$ -*tetrachloro*- (BARGER), 1908, T., 2085; P., 237.
- $\Delta^{1:3}$ -**Dihydrosalicylic acid** (Δ^3 -cyclohexene-2-one-1-carboxylic acid) and its ethyl ester (KÖTZ and GRETHE), 1910, A., i, 24.
- Dihydro-4-stilbazole** and its additive salts and 3'-amino- (FRIEDLÄNDER), 1905, A., i, 818.
- Dihydro-4-stilbazole**, 2'-amino-, and its additive salts (LÖWENSOHN), 1908, A., i, 51.
- Dihydrostilbazole-*o*-carboxylic acid** and its hydrochloride (GARBELE), 1904, A., i, 88.
- Dihydrostrychnine** (SKITA and FRANCK), 1911, A., i, 1017.
- Dihydrostrychninonic acid** (LEUCHS), 1908, A., i, 564.
- Dihydrostyryl-6-methylpyridine**, 2-*m*-nitro- α -hydroxy-, and its salts (WERNER), 1903, A., i, 574.
- Dihydrostyrylquinoline**, *o*-nitro-2- α -hydroxy-, and its salts (LOEW), 1903, A., i, 578.
- Dihydrotanacetone** (SEMMLER), 1903, A., i, 505.
- Dihydrotarnine** and its additive salts (FREUND and REITZ), 1906, A., i, 601.
- Dihydroterephthalic acids**. See *cyclo*-Hexadiene-1:4-dicarboxylic acids.
- Dihydroteresantalan**, **Dihydroteresantallic acid** and its methyl ester, and **Dihydroteresantalol** and its chloride (SEMMLER and BARTELT), 1907, A., i, 704.
- α - and β -**Dihydroterpenylamine** and their salts and derivatives (MORRELL), 1911, A., i, 914.
- Dihydroterpinene**. See Carvomen-thene.
- Dihydrotetrazine**, so-called (BÜLOW), 1907, A., i, 99; (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 360, 451; (BUSCH), 1907, A., i, 564.
- derivatives, formation of (JUNGAHN and BUNIMOWICZ), 1903, A., i, 130; (BOWACK and LAPWORTH), 1905, T., 1867; P., 257.
- 1:4-Dihydrotetrazine** (*tetrazoline*) (RUHEMANN), 1906, T., 1268; P., 238.
- action of aldehydes, methyl iodide, and platinum chloride on (RUHEMANN and MERRIMAN), 1905, T., 1768; P., 257.
- 1:4-Dihydrotetrazine** (*isobisdiazomethane*), constitution of (BÜLOW), 1906, A., i, 905.
- Hantzsch and Silberrad's, constitution of (BÜLOW), 1906, A., i, 905.
- See also 1:3:4-Triazole, 1-amino-.
- 3:6-Dihydro-1:2:4:5-tetrazine** (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 360.
- C-Dihydrotetrazine**. See also *Bisdiazomethane*.
- Dihydrotetrazines** (STOLLÉ), 1904, A., i, 200.

- Dihydrotetrazines**, so-called (CURTIUS, DARAPSKY, and MÜLLER), 1907, A., i, 451.
- s-Dihydrotetrazines**, constitution of (STOLLÉ), 1907, A., i, 359.
- condensation of, with aldehydes (STOLLÉ), 1906, A., i, 315; (RUHE-MANN), 1906, A., i, 465.
- 1:2-Dihydro-1:2:4:5-tetrazine-3-carboxylic acid** and nitroso-, and their salts (MÜLLER), 1908, A., i, 923.
- 1:2-Dihydro-1:2:4:5-tetrazine-3-(or 6)-carboxylmethylamide-6(or 3)-carboxylamide** (CURTIUS, DARAPSKY, and MÜLLER), 1909, A., i, 848.
- 3:4-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylamide** (ψ -*diazooacetamide*) (CURTIUS, DARAPSKY, and MÜLLER), 1909, A., i, 848.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxyldimethylamide** (MÜLLER), 1909, A., i, 847.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylethylamide** (MÜLLER), 1909, A., i, 847.
- 3:4-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylethylamide**, ethylammonium salt of (MÜLLER), 1909, A., i, 847.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylheptylamide** (MÜLLER), 1909, A., i, 847.
- 1:4-Dihydrotetrazine-3:6-dicarboxylic acid**. See 1:3:4-Triazole-2:5-dicarboxylic acid, 1 amino-.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylic acid**, diethylammonium salt (MÜLLER), 1909, A., i, 847.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylic acid**, bromo-, potassium hydrogen salt of (MÜLLER), 1908, A., i, 923.
- 1:2- and 3:4-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylic acids**, alkylamides of (MÜLLER), 1909, A., i, 846.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylmethylamide** (MÜLLER), 1909, A., i, 847.
- 3:4-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylmethylamide**, methylammonium salt of (MÜLLER), 1909, A., i, 847.
- 1:2-Dihydro-1:2:4:5-tetrazine-3:6-dicarboxylpiperidide** (MÜLLER), 1909, A., i, 847.
- Dihydrotetrazole-2-carboxylamide**, 5-nitroso- (WIELAND and BAUER), 1907, A., i, 492.
- Dihydrothebaine** methiodide and its methyl ether (FREUND), 1905, A., i, 920.
- 2:3-Dihydrothiazoles**, 2-imino- (YOUNG and CROOKES), 1905, P., 307.
- 4:5-Dihydrothiazoles**, 2-amino- (YOUNG and CROOKES), 1905, P., 307.
- Dihydrothujaketol** (WALLACH and CHALLENGER), 1911, A., i, 471.
- Dihydrothujaketone** and its derivatives (WALLACH and CHALLENGER), 1911, A., i, 471.
- Dihydrotoluene**. See *Methylcyclohexadiene*.
- $\Delta^{2:4}$ -Dihydro-*o*-toluic acid**. See 1-Methyl- $\Delta^{2:4}$ -cyclohexadiene-2-carboxylic acid.
- Dihydro-*aaa*-trinaphthylcarbinol** (SCHMIDLIN and MASSINI), 1909, A., i, 563.
- Dihydroumbellulone**, bromo-derivatives (LEES), 1904, T., 643; P., 89.
- Dihydroumbellulones**, α - and β - (TUTIN), 1906, T., 1117.
- Dihydroumbelluloneoxime**, hydroxyl-amino-, reduction of (TUTIN), 1907, T., 275; P., 29.
- Dihydrouracil**, bromo-, bromothiocyano-, and thiocyano- (GABRIEL), 1905, A., i, 265, 481.
- Dihydrouridine** (LEVENE and LA FORGE), 1912, A., i, 326.
- Dihydrovetivenol** and its acetate (SEMMER, RISSE, and SCHRÖTER), 1912, A., i, 882.
- Dihydroxanthoxylin** (GORDIN), 1907, A., i, 68.
- Dihydroxotetra-aquochromium sulphate** (WERNER, JOVANOVIĆ, ASCHKINASY, and POSSELT), 1908, A., i, 936.
- Dihydroxy-acids**, $C_{10}H_{18}O_4$, from oxidation of fencholic acid, and their lactones (WALLACH and LANGE), 1909, A., i, 813.
- $\alpha\beta$ -Dihydroxy-acids**, behaviour of, in the animal body (FRIEDMANN and MASSE), 1910, A., ii, 795.
- Dihexahydroxybenzophenonearsenic acid** (BIGINELLI), 1909, A., i, 802.
- 1:8-Di-*o*-hydroxybenzylideneimine**, 2:7-dihydroxy-, and its hydrochloride, hydrobromide, and penta-acetyl derivative (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 963.
- 1:8-Di-*m*-hydroxybenzylideneimine**, 2:7-dihydroxy- (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 964.
- 2:5-Ditetrahydroxybutylpyrazine**. See *Lævulosazine*.
- Dihydroxy-**. See under the parent Substance.
- Dihydroxylamine azoimide** (DENNIS and ISHAM), 1907, A., ii, 256.
- Dihydro-*o*-xylene**. See *Cantharene*.
- Dihydro-*m*- and -*p*-xylenes**. See 1:3- and 1:4-Dimethylcyclohexadienes.

- Dihypovanadates.** See under Vanadium.
- Di-imines**, coloured and colourless (PRINGSHEIM), 1905, A., i, 934.
- Di-indene** (WEISSGERBER and BREHME), 1911, A., i, 623.
- Di-indenedicarboxylic acid** (WEISSGERBER, VOGEL, DOMBROWSKY, and KRAFT), 1911, A., i, 623.
- Di-indenyl and its tetrabromides** (GRIGNARD and COURTOT), 1912, A., i, 250.
- 2:2'-Di-indyl and its picrate** (MADELUNG), 1912, A., i, 499.
- Di-indylmethane** (FINGER and BAUMANN), 1906, A., i, 893.
- Diketo-**. See also under the parent Substance.
- 1:3-Diketo-2-acetylhydrindene (2-acetyl-indandione)** and its reactions (DIECKMANN and STEIN), 1904, A., i, 874.
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- $\alpha\delta$ -Diketoadipic acid, $\beta\gamma$ -dicyano-, ethyl ester** (MICHAEL), 1903, A., i, 736.
dihydroxy- (FERRABOSCHI), 1909, T., 1252; P., 178.
- Diketo-aldehyde $C_{14}H_{22}O_3$** from caryophyllene (SEMMER and MAYER), 1912, A., i, 121.
- 2:4-Diketo-1- and -3-alkyl-1:2:3:4-tetrahydroquinazolines** (v. PAWLEWSKI), 1906, A., i, 542.
- 4:6-Diketo-2-anilo-5:5-diethylhexahydropyrimidine** (MERCK), 1907, A., i, 1089.
- 1:3-Diketo-2-anisylidenehydrindamine** (RUHEMANN), 1911, T., 1490.
- 2:6-Diketo-4-benzenesulphonylpiperazine** (JOHNSON and MCCOLLUM), 1906, A., i, 157.
- 4:5-Diketo-3-benzoyl-1:2-diphenylpyrrolidine** (BORSCHKE), 1909, A., i, 957.
- Diketo-2-benzoyl-2-methylhydrindene** (HANTZSCH and GAJEWSKI), 1912, A., i, 870.
- 4:5-Diketo-3-benzoyl-1-phenyl-2-methoxyphenylpyrrolidine** (BORSCHKE), 1909, A., i, 957.
- 1:3-Diketo-2-benzylidenehydrindamine** (RUHEMANN), 1911, T., 1489.
- 2:4-Diketo-5-benzylidenetetrahydrothiophen, 3-cyano-, and its sodium and barium salts** (BENARY), 1910, A., i, 580.
- Diketoisobutylpiperazine** (FISCHER), 1905, A., i, 688; (FISCHER and BRUNNER), 1905, A., i, 690; (FISCHER and WARBURG), 1905, A., i, 691.
- 2:6-Diketo-4-iso-butyltetrahydropyridine, 3:5-dicyano-, and its derivatives** (GUARESCHI), 1903, A., i, 737.
- $\alpha\beta$ -Diketobutyric acid, β -p-bromophenylhydrazone, phenyllosazone, and silver salt** (WISLICENUS and GÖZ), 1912, A., i, 52.
- osazones from** (AUWERS, DANNEHL, and BOENNECKE), 1911, A., i, 170.
- esters, reactions of** (BOUVEAULT and WAHL), 1905, A., i, 410.
and their hydrates (BOUVEAULT and WAHL), 1905, A., i, 409.
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- $\alpha\beta$ -Diketobutyric acid, α - and γ -bromo-, esters, α -phenylhydrazone and α -otolylhydrazones of** (FAVREL), 1908, A., i, 209.
- 3:6-Diketo-2-sec.-butylpiperazine (glycyl-d-iso-leucine anhydride)** (ABERHALDEN, HIRSCH, and SCHULER), 1909, A., i, 770.
- Diketocamphoric acid, methyl ester, and its copper salt, synthesis of** (KOMPPA), 1904, A., i, 141; 1910, A., i, 51.
- 2:5-Diketo-3-carbamylmethylpyrrolidine-3-carboxylic acid, ethyl ester** (THOLE and THORPE), 1911, T., 1689.
- 5:6-Diketo-2-chlorophenyl-4:5:6:7-tetrahydro-2:1:3-benzotriazole, 4:4:7:7-tetrachloro-** (FRIES and ROTH), 1912, A., i, 658.
- 4:6-Diketo-2-cinnamyl-5:5-diethylhexahydropyrimidine and its diacetyl derivative** (BURROWS and KEANE), 1907, T., 270; P., 37.
- 2:6-Diketo-3:5-dicyano-4-p-hydroxyphenyltetrahydropyridine and its metallic salts** (SCLAVI), 1911, A., i, 398.

- 2:5-Diketo-4-cyanomethylpyrrolidine, 4-cyano- (THOLE and THORPE), 1911, T., 1687.
- 4:6-Diketo-5:5-dialkylhexahydropyrimidines, 2-thio-, preparation of (MERCK), 1907, A., i, 972.
- 3:6-Diketo-1:4-dibenzylpiperazine (MANNICH and KUPHAL), 1912, A., i, 217.
- iso*-2:5-Diketo-3:6-diisobutylpiperazine. See *iso*Leucinimide.
- 2:2-Diketo- $\Delta^{1:4}$ -dicoumaran ("oxindigo") (FRIES and HASSELBACH), 1911, A., i, 151; (STOERMER and BRACHMANN), 1911, A., i, 220.
- 2:4-Diketo-1:3-diethylhexahydropyrimidine, 5:6-diamino-, and its 5-*N*-formyl derivative and 6-imino-, and its oximino-compound (SCARLAT), 1905, A., i, 160.
- 2:6-Diketo-5:5-diethylhexahydropyrimidine, 4-imino-, sodium derivative (MERCK), 1906, A., i, 987.
- 4:6-Diketo-5:5-diethylhexahydropyrimidine (TAFEL and THOMPSON), 1908, A., i, 58.
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- 4:6-Diketo-5:5-diethylhexahydropyrimidine, cyanoimino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 538.
2-thio- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 461.
- 3:5-Diketo-1:2-diethylmalonyl-4:4-diethylpyrazolidine (FREUND and FLEISCHER), 1911, A., i, 236.
- 3:6-Diketo-2:2-diethylpiperazine (ROSENMUND), 1910, A., i, 68.
- 3:6-Diketo-2:5-diethylpiperazine (FISCHER and RASKE), 1905, A., i, 693.
- 2:4-Diketo-1:3-diethylquinazoline (BOGERT and MAY), 1909, A., i, 330.
- 2:4-Diketo-3:4-dihydro-1:3-benzoxazine (carbonylsalicylamide) (EINHORN and v. BAGH), 1910, A., i, 260.
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- 5:6-Diketodihydropyrimidine, 2-amino- (JOHNSON and JOHNS), 1906, A., i, 114.
- 3:4-Diketo-3:4-dihydro- β -quinaacridine (v. NIEMENTOWSKI), 1906, A., i, 209.
- 2:3-Diketodihydro-(1)-thionaphthen, preparation of, and 5-chloro- (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 950.
- 2:3 Diketodihydro-(1)-thionaphthen, derivatives of (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 59, 60.
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- 2:5-Diketodihydro-1:3:4-triazole, and 1-amino- (STOLLÉ, MAMPPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 227.
- 3:6-Diketo-2:5-di- β -hydroxyethylpiperazine (FISCHER and BLUMENTHAL), 1907, A., i, 192.
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- 1:3-Diketo-2':5'-dimethoxybenzylidenehydrindene (KAUFFMANN and BURR), 1907, A., i, 606.
- 1:3-Diketo-2-*p*-dimethylaminobenzylidenehydrindamine (RUHEMANN), 1911, T., 1490.
- 3:6-Diketo-2:5-dimethyl-2:5-diethylpiperazine (ROSENMUND), 1910, A., i, 68.
- 4:6-Diketo-2:8-dimethyl-3:7-di (ethyl-2:5-dimethylpyrrole-3:4-dicarboxylate) tetrahydro-1:3:7:9-naphthate (BOGERT and KROPFF), 1909, A., i, 844.
- 4:6-Diketo-2:8-dimethyl-3:7-dipropyltetrahydro-1:3:7:9-naphthate (BOGERT and KROPFF), 1909, A., i, 844.
- 3:6-Diketo-1:4-di-(3':4')-methylenedioxybenzylpiperazine (MANNICH and KUPHAL), 1912, A., i, 218.
- 2:6-Diketo-4:4-dimethylpiperidine, 3-cyano- (THOLE and THORPE), 1911, T., 432.
- 2:6-Diketo-4:4-dimethylpiperidine-5-carboxylamide, 3-cyano-, and its sodium salt (THOLE and THORPE), 1911, T., 431.
- 2:6-Diketo-4:4-dimethylpiperidine-5-carboxylic acid, 3-cyano-, and its salts (THOLE and THORPE), 1911, T., 432.
- 2:6-Diketo-1:3-dimethyltetrahydropyrimidine, 4-amino-5-aminoacetyl-amino-, and corresponding piperidyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 746.
- 4-amino-5-cyanoacetyl-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 78.
- 5-chloroacetyl-4:5-diamino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 270.
- β -chloro- α -hydroxypropionyl-4:5-diamino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 270.

- 4:4'-Diketo-2:2'-dimethyltetrahydro-3:3'-diquinazoly, 5:5'-*d*-nitro- (BOGERT and SEIL), 1906, A., i, 713.
- 6:6'-*d*-nitro- (BOGERT and COOK), 1906, A., i, 988.
- 7:7'-*d*-nitro- (BOGERT and KLABER), 1908, A., i, 467.
- 4:5-Diketo-2:8-dimethyltetrahydro-1:3:7:9-naphthattetrazine (BOGERT and KROPPF), 1909, A., i, 844.
- 3:7-diamino-, and its hydrochloride, and diacetyl and dibenzylidene derivatives (BOGERT and KROPPF), 1909, A., i, 844.
- 2:6-Diketo-1:3-dimethyltetrahydropyrimidine, 4:5-diamino-, action of aldehydes on (TRAUBE and NITACK), 1906, A., i, 214.
- 4:6-Diketo-3:7-di- β -naphthyl-2:8-dimethyltetrahydro-1:3:7:9-naphthattetrazine (BOGERT and KROPPF), 1909, A., i, 844.
- 4:8-Diketo-1:5- and -1:7-diphenylbenzotriazoles (WOLFF and GRAU), 1912, A., i, 1034.
- 4:5-Diketo-1:2-diphenyl-3-benzylpyrrolidine (BORSCHKE), 1909, A., i, 957.
- 4:6-Diketo-3:7-diphenyl-2:8-dimethyltetrahydro-1:3:7:9-naphthattetrazine (BOGERT and KROPPF), 1909, A., i, 844.
- 4:5-Diketo-1:3-diphenyl-2-*o*-hydroxyphenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 4:5-Diketo-1:3-diphenyl-2-*p*-methoxyphenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 4:5-Diketo-1:2-diphenyl-3-*o*-nitrophenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 4:5-Diketo-2:3-diphenyl-1-*m*-nitrophenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 4:5-Diketo-1:3-diphenyl-2-*p*-nitrophenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 2:5-Diketo-1:4-diphenylpiperazine, *di*-*m*-amino- and *di*-*p*-nitro-, and their dihydrochlorides (DEUTSCH), 1907, A., i, 1082.
- 3:6-dioximino- (DIMROTH and TAUB), 1907, A., i, 97.
- 2:3-Diketo-4:5-diphenylpyrrolidine, *dibromo*- (RUHEMANN), 1909, T., 1605.
- 4:5-Diketo-1:3-diphenylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 2:3-Diketo-4:5-diphenylpyrroline and its phenylhydrazone and reduction product (RUHEMANN), 1909, T., 989; P., 87.
- 2:3-Diketo-4:5-diphenylpyrroline and its oxime (RUHEMANN), 1909, T., 1603.
- 4:6-Diketo-3:7-diphenyltetrahydro-1:3:7:9-naphthattetrazine, 2:8-dihydroxy- (BOGERT and KROPPF), 1909, A., i, 844.
- 4:5-Diketo-2:3-diphenyl-1-*o*-, -*m*-, and -*p*-tolylpyrrolidine (BORSCHKE), 1909, A., i, 956.
- 3:5-Diketo-1:2-dipropylmalonyl-4:4-dipropylpyrazolidine (FREUND, FLEISCHER, and ROTHSCHILD), 1911, A., i, 237.
- 4:6-Diketo-5:5-dipropyl-2- α -propylbutyltetrahydropyrimidine (REMFY), 1911, T., 621.
- 2:6-Diketo-5-ethoxy-1-methylpyrimidine (JOHNSON and JONES), 1909, A., i, 423.
- 2:6-Diketo-5-ethoxytetrahydropyrimidine (JOHNSON and MCCOLLUM), 1906, A., i, 705.
- Diketoethylapocamphoric acid, methyl ester (KOMPPA and ROUTALA), 1911, A., i, 381.
- 4:5-Diketo-5-ethylhexahydropyrimidine, 2-thio- (WHEELER and JAMIESON), 1904, A., i, 941.
- 2:6-Diketo-4-ethyliminopyrimidine and its oximino-derivative (MERCK), 1906, A., i, 537.
- Diketoethylpiperazine (FISCHER and RASKK), 1905, A., i, 693.
- 4:6-Diketo-5-ethyl-2-propyltetrahydropyrimidine (REMFY), 1911, T., 620.
- 3:5-Diketo-1-ethylpyrrolidine, 4-cyano-, and its ammonium salt (BENARY), 1908, A., i, 601.
- 2:4-Diketo-5-ethyltetrahydropyrimidine, 6-amino- (JOHNSON and JOHNS), 1906, A., i, 456.
- 2:5-Diketo-1-ethyltetrahydropyrimidine See 1-Ethyluracil.
- 2:6-Diketo-5-ethyltetrahydropyrimidine See 5-Ethyluracil.
- 6:6'-Diketo-2:2'-ethylthiol-5:5'-dipyrimidine (JOHNSON, PECK, and AMBLER), 1911, A., i, 576.
- 4:6-Diketo-2-guanidinopyrimidine and its salts (RACKMANN), 1910, A., i, 896.
- 2:6-Diketo-hexahydropyrimidine, 4-amino- (MERCK), 1906, A., i, 537, 703.
- 4:6-Diketo-hexahydropyrimidine, 2-thio-, and its 5-alkyl derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 893.
- 2:6-Diketo-hexahydropyrimidine-5-acetamide, 4:5-dihydroxy- (JOHNSON and AMBLER), 1911, A., i, 577.

- Diketocyclohexane.** See *cyclo*Hexan-dione.
- 2:6-Diketo-4-hexyltetrahydropyridine, 3:5-dicyano-,** and its derivatives (GUARESCHI), 1903, A., i, 737.
- 1:3-Diketohydrindamine** (RUHEMANN), 1911, T., 1488; P., 210.
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- 1:2-Diketohydrindene,** preparation of, and its derivatives (PERKIN, ROBERTS, and ROBINSON), 1912, T., 232; P., 4.
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- Diketohydrindenebisacetophenone-oo'-dicarboxylic acid** and its alcoholate (HANTZSCH and FISCHER), 1912, A., i, 873.
- Diketohydrindene-2-carboxylic acid,** ethyl ester, 2-mercurichloride (HANTZSCH and GAJEWSKI), 1912, A., i, 871.
- 2-Diketohydrindeneindone-3-carboxylic acid** and 2-bromo- (STADLER), 1903, A., i, 102.
- 2-Diketohydrindene-3-methoxy-, -3-ethoxy-, -2-bromo-3-methoxy-, and -2-bromo-3-ethoxy-hydrindone-3-carboxylolactones** (STADLER), 1903, A., i, 102.
- Diketohydrindylidenediketohydrindamine,** and its ammonium salt (RUHEMANN), 1911, T., 1491; P., 210.
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- Diketomethylisobutylpiperazine** (FISCHER and WARBURG), 1905, A., i, 691.
- 3:6-Diketo-2-methyl-5-sec.-butylpiperazine** (*d-alanyl-d-isoleucine anhydride*), (ABDERHALDEN, HIRSCH, and SCHULER), 1909, A., i, 770.
- Diketo-4-methylcoumaran** (FRIES and FINCK), 1909, A., i, 43.
- 4:6-Diketo-1-methyl-5:5-diethylhexahydropyrimidine, 2-imino-** (MAJIMA and KOBAYASHI), 1908, A., i, 224.
- 4:6-Diketo-2-methyl-5:5-diethyltetrahydropyrimidine** and its hydrochloride (FREUND and FLEISCHER), 1911, A., i, 236.
- 2:3-Diketo-5-methyldihydro-1-thionaphthen** (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 950.
- 2:3-Diketo-5-methyldihydro-1-thionaphthen-2-oxime** (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 60.
- 1:3-Diketo-5:6-methylenedioxyhydrindylideneaniline** (RUHEMANN), 1912, T., 786.
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- 4:6-Diketo-5-methyl-2-ethyltetrahydropyrimidine** (REMFY), 1911, T., 620.
- 4:6-Diketo-5-methylhexahydropyrimidine, 2-thio-** (WHEELER and JAMIESON), 1904, A., i, 941.
- Diketo-2-methylhydrindene, 2-chloro-, and 2-iodo-** (HANTZSCH and GAJEWSKI), 1912, A., i, 870.
- 4:6-Diketo-2-methylimino-5:5-diethylhexahydropyrimidine** (MAJIMA and KOBAYASHI), 1908, A., i, 224.
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- 4:6-Diketo-2-methyl-5-propyltetrahydropyrimidine** (REMFY), 1911, T., 620.
- 2:6-Diketo-3-methylpyrimidine, 4-amino-** (MERCK), 1906, A., i, 703.
- 1:3-Diketo-4-methyltetrahydrobenzene.** See 1-Methyl- Δ^1 -cyclohexene-4:6-dione.
- 2:3-Diketo-1-methyltetrahydronaphthalene, 1:4:4-trichloro-6-bromo-** (FRIES and HEMPELMANN), 1909, A., i, 809.
- 2:6-Diketo-4-methyl- Δ^4 -tetrahydropyridyl-3-acetic acid, 5-cyano-,** and its salts (GUARESCHI), 1905, A., i, 823.
- 2:6-Diketo-1-methyltetrahydropyrimidine.** See 1-Methyluracil.

- 2:6-Diketo-3-methyltetrahydropyrimidine**, 4:5-diamino-, action of aldehydes on (TRAUBE and NITACK), 1906, A., i, 214.
- 4-amino-5-oxalylamino-, and its disodium salt, 4-amino-5-cyanoacetyl-amino-, and 4:5-diamino- (FARBEN-FABRIKEN FORM. F. BAYER & CO.), 1910, A., i, 78.
- 2:6-Diketo-5-methyltetrahydropyrimidine**. See Thymine.
- 4:6-Diketo-2-methylthioltetrahydropyrimidine**, and 5-amino-, 5-oximino-, and 5-methyl and -ethyl derivatives (WHEELER and JAMIESON), 1904, A., i, 940.
- 4:6-Diketo-mono- and -di-5-alkylhexahydropyrimidines**, 2-imino-, preparation of (CHEMISCHE FABRIK AUF AKTIEN FORM. E. SCHERING), 1907, A., i, 253.
- $\alpha\beta$ -Diketonaphthaphenazine** (FISCHER), 1904, A., i, 112.
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- 2:6-Diketo-5-naphthoxy-4-naphthoxy-methyltetrahydropyrimidine** (JOHNSON and HILL), 1912, A., i, 913.
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- $C_{11}H_{20}O_2$, and its *p*-nitrophenylhydrazones and semicarbazone, from ethyl $\alpha\gamma$ -diacetylheptane- $\alpha\gamma$ -dicarboxylate (v. BRAUN), 1907, A., i, 893.
- $C_{12}H_{20}O_2$, from caryophyllene and its semicarbazone (SEMMLER and MAYER), 1912, A., i, 121.
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- s - α -Diketones**, preparation of (BOUVEAULT and LOCQUIN), 1905, A., i, 561, 573.
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 α -Diketone-osazones, formation of, from aldehyde-phenylhydrazones (BILTZ and SIEDEN), 1903, A., i, 120.
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2:6-Diketo-5-phenoxy-4-chloromethyl-tetrahydropyrimidine (JOHNSON and HILL), 1912, A., i, 912.
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2:3-Diketo-4-phenyl-5-anisylpyrroline and its phenylhydrazone (RUHEMANN), 1909, T., 1607.
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4:6-Diketo-2-phenyl-5:5-diethylhexahydropyrimidine and its 1:3-diacetyl derivative (BURROWS and KEANE), 1907, T., 269; P., 37.
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- 3:4-Diketo-1-phenyl-2-5-*di-p*-nitrobenzylpyrrolidine-2:5-dicarboxylic acid**, ethyl ester (JOHNSON and BENGIS), 1911, A., i, 564.
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- 2:5-Diketo-1-phenylpiperazine** (LEUCHS and MANASSE), 1907, A., i, 770.
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- 2:3-Diketo-4-phenyl-5-piperonylpyrrolidine** and its phenylhydrazone (RUHEMANN), 1909, T., 1608.
- 2:3-Diketo-5-phenylpyrrolidine-4-carboxylic acid**, ethyl ester, and its 1-alkyl derivatives, and their amine salts (SIMON and CONDUCHÉ), 1907, A., i, 964.
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- 2:3-Diketo-5-phenylpyrroline** and its derivatives (MUMM and MÜNCHMEYER), 1911, A., i, 80.
- 1:4-Diketo-2-phenyl-1:2:3:4-tetrahydrophthalazine** (DUNLAP), 1905, A., i, 830.
- Diketophenyltetrahydroquinazoline** (RIEDEL), 1912, A., i, 774.
- 2:4-Diketo-3-phenyl-1:2:3:4-tetrahydroquinazoline** (v. PAWLEWSKI), 1905, A., i, 246.
- bromo-** (KUNCKELL), 1905, A., i, 382.
- 2:4-Diketo-3-phenyltetrahydrothiazole**, benzylidene, salicylidene, and cinnamylidene derivatives of (RUHEMANN), 1909, T., 120.
- 2:3-Diketo-4-phenyl-5-*o*-tolylpyrroline** and its phenylhydrazone (RUHEMANN), 1909, T., 990.
- 2:3-Diketo-4-phenyl-5-*m*- and -*p*-tolylpyrrolines** and their phenylhydrazones (RUHEMANN), 1909, T., 1606.
- Diketopimelic acid**. See Oxalyl-lævulic acid.
- 2:6-Diketopiperazine** (*iminodiacetimide*) (JONGKEES), 1908, A., i, 959.
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- Diketopiperazines** (FISCHER), 1908, A., i, 688.
- 2:5-Diketopiperazines**, stereochemistry of (FISCHER and RASKE), 1906, A., i, 457; 1907, A., i, 18.
- degradation of, in the organism of rabbits (ABDERHALDEN), 1908, A., ii, 521; (ABDERHALDEN and WACKER), 1908, A., ii, 1052.
- 2:5-Diketopiperazine-1:4-diacetic acid** and its ethyl ester and amide (JONGKEES), 1908, A., i, 959.
- 2:5-Diketopiperazine-3:6-diacetic acid** and its methyl ester (FISCHER and KOENIGS), 1907, A., i, 487.
- ethyl ester, and amide (FISCHER and KOENIGS), 1905, A., i, 32.
- 2:5-Diketopiperazine-1:4-dibenzoic acid**, ethyl ester (EINHORN and SEUFFERT), 1911, A., i, 45.
- Diketopiperazinobis(*o*-nitro-*p*-methylstyryl methyl ketone)** (EINHORN and GÖTTLER), 1910, A., i, 113.
- 4:6-Diketo-5-propyl-2-butyltetrahydropyrimidine** (REMFREY), 1911, T., 621.
- 2:4-Diketo-1- (or 3-) *n*-propylquinazoline** (BOGERT and MAY), 1909, A., i, 330.
- 3:5-Diketopyrrolidine**, 4-cyano-, and its silver salt and amide (BENARY), 1908, A., i, 601.
- 2:3-Diketopyrrolidine-4-carboxylic acid**, ethyl ester, 5-alkyl derivatives and their salts (SIMON and CONDUCHÉ), 1907, A., i, 963.
- Diketopyrroline compounds**, absorption spectra of (PURVIS), 1910, T., 2535; P., 297.
- 1:3-Diketo-2-salicylidenehydrindamine** (RUHEMANN), 1911, T., 1490.
- 0κ-Diketostearic acid**, preparation of, and its dioxime and pyrrole derivative (GOLDSOBER), 1907, A., i, 888.
- 5:8-Diketo-5:6:7:8-tetrahydro-1:6- (or 7)-benzodiazine**, and its salts (FELS), 1904, A., i, 617.
- 5:8-Diketo-5:6:7:8-tetrahydro-1:6- (or 7)-benzodiazinecarboxylic acid**, methyl ester (FELS), 1904, A., i, 617.
- 3:4-Diketotetrahydrofuran-2:5-dicarboxylic acid**, ethyl ester (JOHNSON and JOHNS), 1906, A., i, 874.
- 2:3-Diketotetrahydronaphthalene**, tetra-chloro- and dibromodinitro-, and dichlorodinitro- (ZINCKE and FRIES), 1904, A., i, 1008.
- 4:6-Diketotetrahydro-1:3:7:9-naphthatetrazine** (BOGERT and KROPPF), 1909, A., i, 844.

- 4:9-Diketotetrahydro-1:3:6:8-naphthatetrazine and its alkyl derivatives (BOGERT and NELSON), 1907, A., i, 660.
- 2:6-Diketotetrahydropyrimidine, 4:5-diamino-, and its 3-methyl and 1:3-dimethyl derivatives (MERCK), 1906, A., i, 214, 536.
and its sulphate (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 195.
- 5-cyano- (5-cyanouracil), synthesis of, and 5-carboxylamide (JOHNSON), 1910, A., i, 69.
- 4-imino-5-oximino-, preparation of, and its derivatives (MERCK), 1911, A., i, 167.
- 2:6-Diketotetrahydropyrimidines, action of nitric acid on (JOHNSON), 1908, A., i, 739.
- 2:4-Diketo-1:2:3:4-tetrahydro-1:3-quinazoline (benzoylenecarbamide). See 1:2:3:4-Tetrahydroquinazoline-2:4-dione.
- 3:6-Diketo-1:2:3:6-tetrahydro-1:2:4:5-tetrazine (LINCH), 1912, T., 1757; P., 144.
- Diketotetrahydrothiazole, ammonium salt, conductivity measurements of the hydrolysis of, and the ionisation of water (KANOLT), 1907, A., ii, 839.
- 2:4-Diketotetrahydrothiophen, 3-cyano-, and its silver salt and diacetyl derivative (BENARY), 1910, A., i, 580.
- 2:4-Diketotetrahydrothiophen-3-carboxylamide, and its potassium salt, (BENARY), 1910, A., i, 580.
- 4:5-Diketo-3:4:5:6-tetrahydrotriphenylacetic acid, 3:3:6:6-tetrachloro-2-hydroxy-, and its lactone (FRIES and KOHLHAAS), 1912, A., i, 661.
- Diketo-2:2:5:5-tetramethyltetrahydrofuran and its dioxime (DUPONT), 1912, A., i, 484.
- 4:6-Diketo-2:3:7:8-tetramethyltetrahydro-1:3:7:9-naphthatetrazine (BOGERT and KROEFF), 1909, A., i, 844.
- Di-*p*-ketotolane dichloride, hexachloro- (ZINCKE and FRIES), 1903, A., i, 183.
- 4:5-Diketo-1-tolyl-2-methylpyrrolidine (SIMON), 1908, A., i, 688.
- 2:4-Diketo-3-*o*- and -*p*-tolyltetrahydroquinazolines (KUNCKELL), 1905, A., i, 382.
- 2:4-Diketo-5:6:7-trimethoxy-1:2:3:4-tetrahydroquinazoline and its alkali derivatives (POLLAK and GOLDSTEIN), 1907, A., i, 320.
- 4:5-Diketo-1:2:3-triphenylpyrrolidine and its acetyl and benzoyl derivatives (BORSCHKE), 1909, A., i, 956.
- 1:3-Diketo-2-*o*-veratrylidenehydrindene (PERKIN, ROBERTS, and ROBINSON), 1911, P., 58.
- Dilactic acid, *β*-dithio- (HOLMBERG), 1905, A., i, 324.
- dl*-Dilactide (JUNGFLEISCH and GODCHOT), 1907, A., i, 280.
- Dilactone, C₁₁H₁₆O₄, from the oxidation of hexylactic acid (FITTIG and SIMON), 1904, A., i, 555.
- Dilactones (FITTIG, KRAUS, LENTZ, v. PANAYEFF, and PETERS), 1907, A., i, 471.
- Dilactylcarbamide and its metallic salts (CLEMMENSEN and HEITMAN), 1909, A., i, 775.
- Dilactyl-diamide and -imide (JUNGFLEISCH and GODCHOT), 1907, A., i, 749.
- Dilactylic acid, dithio- (BIILMANN), 1905, A., i, 626.
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- r*-Dilactylic acid and anhydride (JUNGFLEISCH and GODCHOT), 1907, A., i, 471.
- Dilactylic acids, thio-, optically active (LOVÉN), 1908, A., i, 714.
- r*- and *i*-Dilactylic acids and their magnesium salts (JUNGFLEISCH), 1912, A., i, 942.
- Dilatograph, self-registering (v. SAHMEN and TAMMANN), 1903, A., ii, 356.
- Dilatometer, indirect-analysis by means of (MILLER), 1909, A., i, 81.
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- Dilatometric measurements of tautomeric substances (GIOLITTI), 1905, A., ii, 12.
- Dilatometric researches (BOTTAZZI and BUGLIA), 1912, A., ii, 135.
- dl*-Dilaudanosine (GADAMER), 1912, A., i, 49.
- Dilaurin (GRÜN and SCHACHT), 1907, A., i, 463.
- αβ*-Dilaurin (THIEME), 1912, A., i, 334.
- αβ*-Dilaurin, *α*-chloro- (GRÜN and THEIMER), 1907, A., i, 464.
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- s*-Dilaurylhydrazide, conversion of, into diazole derivatives (STOLLÉ and SCHÄTZLEIN), 1904, A., i, 697.

- Dilemene** from oil o. patchouli (DE JONG), 1905, A., i, 802.
- 4-Dileucoformanilidine** and its hydrate and sulphate (REITZENSTEIN and BÖNITSCH), 1912, A., i, 664.
- Di-*l*-leucyl-*l*-cystine** (FISCHER and GERNGROSS), 1909, A., i, 367.
- i*-Dilencylglycylglycine** (FISCHER), 1904, A., i, 653.
- Dilituric acid** and its salts (BARTLING), 1905, A., i, 420.
- Dill herb oil** (SCHIMMEL & Co.), 1909, A., i, 113.
- Dilution** and colour, relation between (PICCARD), 1911, A., ii, 561.
- Dilution law**, deduction of the (VAN ROSSEM), 1912, A., ii, 1147.
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- s*-Dimelilotylhydrazide** (PSCHORR and EINBECK), 1905, A., i, 589.
- Dimethyl dimethylene ether**, preparation of (LINGNER), 1908, A., i, 351.
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- 2:5-Dimethoxyacetophenone** and its phenylhydrazone (KAUFFMANN and BEISSWENGER), 1905, A., i, 280; ii, 218.
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- 3:5-Dimethoxyacetophenone**, α -bromo- (TAMBOUR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- Di-*p*-methoxydiaminostilbene** and its picrate and diacyl derivatives (FISCHER and PRAUSE), 1908, A., i, 220.
- Dimethoxyanhydroglycogallol** and its potassium salt (PERKIN and WILSON), 1903, T., 137.
- 3:5-Dimethoxyaniline**. See Resorcinol, 5-amino-, dimethyl ether.
- 4:5-Dimethoxy-2-*o*-anisylidene-1-hydrindone** (PERKIN, ROBERTS, and ROBINSON), 1911, P., 58.
- 2:3-Dimethoxyanthracene** and its picrate and polymeride (LAGODZINSKI), 1906, A., i, 82.
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- 1:4-Dimethoxyanthraquinone** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 469.
- 1:8-Dimethoxyanthraquinone**, salts of (FISCHER, GROSS, and NEBER), 1911, A., i, 887.
- o*-Dimethoxyanthraquinones**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1905, A., i, 654.
- 1:2-Dimethoxyanthrone**. See Deoxy-alizarin dimethyl ether.
- Di-*o*-methoxybenzaldazine hydrochloride** (CURTIUS and GLASER), 1912, A., i, 506.
- Di-*m*-methoxybenzaldazine** (CURTIUS and POTTER), 1912, A., i, 507.
- 2:4-Dimethoxybenzaldehyde**, synthesis of, and its azine and oxime (GATTERMANN), 1908, A., i, 33.
- 2:5-Dimethoxybenzaldehyde**, synthesis of (GATTERMANN), 1908, A., i, 34.
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- 4:5-Dimethoxybenzaldehydedimethylacetal**, 2-nitro- (BAMBERGER and ELGER), 1910, A., i, 268.
- 4:5-Dimethoxybenzaldoxime**, 2-nitro- (BAMBERGER and ELGER), 1910, A., i, 269.
- Dimethoxybenzene**, *dibromonitro*- (JACKSON and FISKE), 1903, A., i, 639.
- 1:2-Dimethoxybenzene**. See Veratrole.
- 1:3-Dimethoxybenzene**. See Resorcinol dimethyl ether.
- 1:4-Dimethoxybenzene**. See Quinol dimethyl ether.
- 2:6-Dimethoxybenzeneazo- β -naphthol** (KAUFFMANN and FRANCK), 1907, A., i, 1094.
- 2:4-Dimethoxybenzeneazoresorcinol** (KAUFFMANN and KUGEL), 1911, A., i, 930.
- 3:4-Dimethoxybenzene-1:2-dicarboxylic acid**. See Hemipinic acid.

- Di-*p*-methoxybenzenesulphonylhydroxylamine** (FICHTER and TAMM), 1910, A., i, 836.
- 3:6-Dimethoxybenzene-1:2:4:5-tetracarboxylic acid**, ethyl ester, morphophor-ty of (ROSICKÝ), 1909, A., i, 458.
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- 3:3'-Dimethoxybenzhydrol**, 4:4'-*di*-amino- (FINGER), 1909, A., i, 518.
- p*-Dimethoxybenzhydrol** and its acetate (SCHNACKENBERG and SCHOLL), 1903, A., i, 341.
- o*-Dimethoxybenzil** (IRVINE and MOODIE), 1907, T., 541.
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- 2:4-Dimethoxybenzoic acid** (*dimethyl-β-resorcylic acid*), methyl and ethyl esters (PERKIN and SCHIESS), 1903, P., 14; 1904, T., 159.
- 2:5-Dimethoxybenzoic acid** and its ethyl ester, amide, and nitrile (KAUFFMANN and GROMBACH), 1906, A., i, 287.
- 2:6-Dimethoxybenzoic acid**, 4-hydroxy-, and its methyl ester (FISCHER and PFEFFER), 1912, A., i, 559.
- 3:4-Dimethoxybenzoic acid**. See Veratric acid.
- 3:5-Dimethoxybenzoic acid** and its methyl ester (BÜLOW and RIESS), 1903, A., i, 101.
- o*-Dimethoxybenzoin**, alkylation of (IRVINE and McNICOLL), 1908, T., 1607; P., 192.
- Dimethoxybenzoins**, *o*- and *p*-, reduction products of (IRVINE and MOODIE), 1907, T., 536; P., 62.
- 2:4-Dimethoxybenzophenone** and its leuco-derivative (KÖNIG and v. KOSTANECKI), 1907, A., i, 62.
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- 2:5-Dimethoxybenzophenone**, 4'-nitro-, and its derivatives (KAUFFMANN and DE PAY), 1912, A., i, 365.
- 3:4-Dimethoxybenzophenone**, 2-hydroxy- (MOTYLEWSKI), 1909, A., i, 822.
- 6-hydroxy-**, and its acetyl derivative (BARGELLINI and MARTEGIANI), 1911, A., i, 966.
- 2:2'-Dimethoxybenzophenone**, 5:5'-*di*-bromo- (DIELS and ROSENMUND), 1906, A., i, 674.
- 3:3'-Dimethoxybenzophenone**, 4:4'-*di*-amino-, and its diacetyl compound (FINGER), 1909, A., i, 518.
- 4:4'-Dimethoxybenzophenone** (AUWERS), 1904, A., i, 67.
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- 4:4'-Dimethoxybenzophenone**, 3:3'-*di*-nitro- (CONSONNO), 1904, A., i, 677.
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- 2:5- and 3:4-Dimethoxybenzoyl cyanides** (MAUTHNER), 1909, A., i, 161.
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- 2:4-Dimethoxybenzoylacetophenone** and its copper compound (PERKIN and SCHIESS), 1903, P., 14; 1904, T., 160.
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- 3':4'-Dimethoxy-*o*-benzoylbenzoic acid** and its salts (LAGODZINSKI), 1906, A., i, 82.
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- 2:5-Dimethoxy-1-benzoylcoumarone** and its phenylhydrazone (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 44.
- 3':4'-Dimethoxy-1-benzoylcoumarone** (ZWAYER, v. KOSTANECKI, and SZWEJKOWSKA), 1908, A., i, 444.
- 2:5-Dimethoxybenzoyl-2:5-dimethoxyanilide** (KAUFFMANN and GROMBACH), 1906, A., i, 288.
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- 5:4'-Dimethoxy-1-benzoyl-2-methylcoumarone** (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 45.
- Di-*p*-methoxybenzoyl-4-methylthiocarbamides, *s*- and *os*-** (JOHNSON and JAMIESON), 1906, A., i, 352.
- 3:5- and 5:6-Dimethoxy-2-benzoylphenoxyacetic acid** (MOTYLEWSKI), 1909, A., i, 822.
- 2:4-Dimethoxybenzoylpropionic acid** and its methyl ester, and the condensation of the ester with ethyl oxalate (PERKIN and ROBINSON), 1908, T., 506.
- 3:4-Dimethoxybenzoylpropionic acid**, and 2-hydroxy-, and its methyl ester (BARGELLINI and GIUA), 1912, A., i, 356, 357.
- 2:4- and 2:5-Dimethoxybenzoylpropionic acids** (BARGELLINI and GIUA), 1912, A., i, 356.
- 2:4-Dimethoxybenzoylpyruvic acid**, ethyl ester, preparation of (PERKIN and ROBINSON), 1908, T., 705.
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- 2:3-Dimethoxybenzyl alcohol** and its salts (DOUETTEAU), 1912, A., i, 620.
- 3:4-Dimethoxybenzyl alcohol** and its derivatives (TIFFENEAU), 1911, A., i, 973.
- 3:4-Dimethoxybenzyl alcohol**, 6-bromo- (PSCHORR, SELLE, KOCH, STOFF, and TREIDEL), 1912, A., i, 776.
- Di-*o*-methoxybenzylamine** and its platinichloride (CURTIUS and GLASER), 1912, A., i, 506.
- Di-*m*-methoxybenzylamine** and its salts (CURTIUS and POTTER), 1912, A., i, 508.
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- 3:4-Dimethoxybenzylamine** and its salts and derivatives (DOUETTEAU), 1911, A., i, 973.
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- 2':4'-Dimethoxy-2-benzylbenzoic acid** and its acid chloride (TAMBOR and SCHÜRCH), 1910, A., i, 559.
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- 3:4-Dimethoxybenzylcyanacetamide** (PICCININI), 1904, A., i, 920.
- 6:8-Dimethoxy-1-benzyl-3:4-dihydroisoquinoline** and its picrate and hydrochloride (SALWAY), 1911, T., 1323; P., 192.
- 2:3-Dimethoxybenzylidimethylamine** and its methiodide (DOUETTEAU), 1912, A., i, 620.
- 3:4-Dimethoxybenzylidimethylamine** and its salts (TIFFENEAU), 1911, A., i, 973.
- s*-Di-*o*-methoxybenzylhydrazine** and its hydrochloride and diacetyl derivative (CURTIUS and DETOROS), 1912, A., i, 506.
- 5-Di-*m*-methoxybenzylhydrazine** and its hydrochloride (CURTIUS and POTTER), 1912, A., i, 507.
- s*-Di-*p*-methoxybenzylhydrazine** and its derivatives (CURTIUS and TRAUMANN), 1912, A., i, 508.
- 5:6-Dimethoxy-2-benzylhydrindene, 1:2'-dihydroxy-** (PERKIN and ROBINSON), 1907, T., 1096.
- 3':4'-Dimethoxybenzylidene-2-acetyl-1-naphthol** and its acetyl derivative (BIGLER and v. KOSTANECKI), 1907, A., i, 76.
- 1:4-Di-*o*-methoxybenzylideneamino-piperazine** (BACKER), 1912, A., i, 731.
- 2:5-Dimethoxybenzylideneaniline** and its salts (KAUFFMANN and BURR), 1907, A., i, 606.
- 3':4'-Dimethoxybenzylidenesocoumarone** (CZAPLICKI, v. KOSTANECKI, and LAMPE), 1909, A., i, 236.

- 3:4-Dimethoxybenzylidenediphloroglucinol** hexamethyl ether (V. KOSTANECKI and LAMPE), 1907, A., i, 74.
- 5:5'-Di-*m*-methoxybenzylidene-3:3'-ethylenedirhodanine.** *di-p*-hydroxy- (NÄGELE), 1912, A., i, 796.
- 5:5'-Di-*p*-methoxybenzylidene-3:3'-ethylenedirhodanine** (NÄGELE), 1912, A., i, 795.
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- Di-*p*-methoxybenzylidenehydrazine, and *aa*-dichloro-** (STOLLÉ and BAMBACH), 1906, A., i, 709.
- 2':4'-Dimethoxy-2-benzylidene-1-hydrindone** (PERKIN and ROBINSON), 1907, T., 1094.
- 5:6-Dimethoxy-2-benzylidene-1-hydrindone, 2-hydroxy-, and its derivatives** (PERKIN and ROBINSON), 1907, T., 1095.
- 2':4'-*di*hydroxy-** (ENGELS, PERKIN, and ROBINSON), 1908, T., 1154.
and its diacetyl derivative (PERKIN and ROBINSON), 1907, T., 1097.
- 1:8-Di-*o*- and -*p*-methoxybenzylidenemimines, 2:7-*di*hydroxy-, and their triacetyl derivatives** (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 963.
- 2:5-Dimethoxybenzylidenemalononic acid** (KAUFFMANN and BURR), 1907, A., i, 606.
- 2:5-Dimethoxybenzylidenesemicarbazide** (KAUFFMANN and BURR), 1907, A., i, 606.
- 2:3-Dimethoxybenzylmethylamine and its salts** (DOUETTEAU), 1912, A., i, 620.
- 3:4-Dimethoxybenzylmethylamine and its hydriodide** (TIFFENEAU), 1911, A., i, 973.
- Di-*p*-methoxybenzylmethylamine** (TIFFENEAU), 1911, A., i, 779.
- 3:4-Dimethoxybenzyl methyl ketone and its oxime** (ROSENMUND, MANNICH, and JACOBSON), 1912, A., i, 967.
- 6:8-Dimethoxy-1-benzyl-2-methyl-1:2:3:4-tetrahydroisoquinoline and its picrate** (SALWAY), 1911, T., 1324; P., 192.
- Dimethoxybenzylloxamic acid** (RIMINI), 1905, A., i, 199.
- 2:4-Dimethoxy-5-benzylpyrimidine, 6-chloro-** (KAST), 1912, A., i, 1023.
- 6:7-Dimethoxy-1-benzylisoquinoline methiodide** (DECKER and PSCHORR), 1904, A., i, 927.
- 6:7-Dimethoxy-2-benzyl-1-isoquinolone and its picrate** (DECKER and KLAUSER), 1904, A., i, 389; (DECKER and GIRARD), 1904, A., i, 1045.
- 2:5-Dimethoxy- α -benzylstilbene and its bromo-derivative** (KAUFFMANN and GROMBACH), 1906, A., i, 287.
- Dimethoxybisbenzaronyl and its reduction** (RUHEMANN), 1903, T., 1132; P., 202.
- Dimethoxybisketocoumaran.** See Dimethoxydicoumaranone.
- 3:4-Dimethoxy- β -bromo- α -methoxyethylbenzene** (MANNICH and NEUBERG), 1910, A., i, 412.
- 3:4-Dimethoxy- α -5-bromo-2-methoxyphenyleinnamic acid, 2-nitro-, and its ammonium salt, and 2-amino-** (KNORR and HÖRLEIN), 1909, A., i, 919.
- 3:4-Dimethoxy- α -6-bromo-3 methoxyphenyleinnamic acid, 2-amino-, and 2-nitro-** (PSCHORR and KOCH), 1912, A., i, 767.
- $\alpha\delta$ -Dimethoxybutane** (HAMONET), 1904, A., i, 467.
- $\alpha\delta$ -Dimethoxy- $\Delta\beta$ -butinene and its bromides** (GAUTHIER), 1909, A., i, 355.
- $\alpha\alpha$ -Dimethoxy- $\Delta\beta$ -butylene and β -bromo-** (CLAISEN), 1911, A., i, 492.
- 3:4-Dimethoxychalkone, 2'-hydroxy-** (BERSTEIN, FRASCHINA, and V. KOSTANECKI), 1905, A., i, 606.
- 3:4'-Dimethoxychalkone, 2'-hydroxy-, and its acetyl derivative** (V. KOSTANECKI and WIDMER), 1905, A., i, 78.
- 3:4'- and 3:5'-Dimethoxychalkone, 2':4'-*di*hydroxy-, and diacetyl derivative of the former** (MILOBENDZKI, V. KOSTANECKI, and LAMPE), 1910, A., i, 629.
- 2':5'-Dimethoxychalkone, 2-hydroxy-** (TAMBOR, GÜNSBERG, KELLER, CHANSCHY-HERZENBERG, ROSENKNOPF, and LICHTENBAUM), 1912, A., i, 43.
- 3':4'-Dimethoxychalkone, 2-hydroxy-, and its sodium salt, and dibromide of the acetate** (ZWAYER, V. KOSTANECKI, and SZWEJKOWSKA), 1908, A., i, 444.
- 2'-hydroxy-, and its acetyl derivative and dibromide** (WOKER, V. KOSTANECKI, and TAMBOR), 1904, A., i, 184.
- 3:4-Dimethoxy- α -chlorobenzyldeoxybenzoin** (KLAGES and TETZNER), 1903, A., i, 101.
- 5:6-Dimethoxy-2-chloromethylene-1-hydrindone** (ENGELS, PERKIN, and ROBINSON), 1908, T., 1153.
- 7:8-Dimethoxychromone and its -2-carboxylic acid** (DAVID and V. KOSTANECKI), 1903, A., i, 272.
- 2:3-Dimethoxyinnamic acid** (PERKIN, ROBERTS, and ROBINSON), 1911, P., 58.

- 2:5-Dimethoxycinnamic acid** and its ethyl ester (KAUFFMANN and BURR), 1907, A., i, 606.
- 3:4-Dimethoxycinnamic acid**, amino-, benzoyl derivative, anhydride of (PSCHORR and KNÖFFLER), 1911, A., i, 669.
- Dimethoxycinnamic acids**, 2:4- and 3:4-, and their ethyl esters (PERKIN and SCHIESS), 1903, P., 14; 1904, T., 162.
- 5:2', 5:3', and 5:4'-Dimethoxy-2-cinnamoylphenoxyacetic acids**, and their ethyl esters (ABELIN and v. KOSTANECKI), 1910, A., i, 631.
- Dimethoxycyanuric chloride** (DIELS and LIEBERMANN), 1903, A., i, 868.
- 2:5-Dimethoxydeoxybenzoin**. See Phenylacetylquinol dimethyl ether.
- 4:5-Dimethoxydeoxybenzoin**, 2-hydroxy- (BARGELLINI and MARTEGANI), 1911, A., i, 966.
- 2:7-Dimethoxy-9:10-di-*p*-anisylacenaphthene** (BESCHKE and KITAJ), 1909, A., i, 918.
- 2:7-Dimethoxy-9:10-di-*p*-anisylacenaphthene glycol** (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.
- 2:7-Dimethoxy-9:9-di-*p*-anisylacenaphthenone** (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.
- 2:7-Dimethoxy-9:10-di-*o*-*m*-, and -*p*-anisylacenaphthylene** (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 963.
- Dimethoxycoumaranone** (FELIX and FRIEDLÄNDER), 1910, A., i, 279.
- 5':6'-Dimethoxycoumaranonyl-1-hydroxy-4-oxynaphthalene** (FELIX and FRIEDLÄNDER), 1910, A., i, 279.
- 2:2'-Dimethoxy-1:1'-dianthraquinonyl** (BENESCH), 1911, A., i, 794.
- 9:9'-Dimethoxydianthrone** (MEYER), 1911, A., i, 195.
- 2:7-Dimethoxy-1:8-dibenzoylnaphthalene** (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.
- Dimethoxydibenzyl**. See Dimethoxy-*s*-diphenylethane.
- Dimethoxydibenzylideneacetone**. See Dimethoxydistyryl ketone.
- 6:6'-Dimethoxy-2:2'-dibenzylideneaniline** (MAYER), 1912, A., i, 478.
- 2:2'-Dimethoxydibenzylidene-*p*-phenylenediamine** and its hydrochloride (SENIER and SHEPHEARD, 1909, T., 1951).
- 3:3'-Dimethoxy-4:4'-dicarbethoxy-*α*-distyryl-*isooxazole*** (MILOBENDZKI, v. KOSTANECKI, and LAMPE), 1910, A., i, 629.
- 2:7-Dimethoxy-5:10-di-*p*-chlorophenyl-dihydrophenazine dihydrochloride** (WIELAND and SÜSSER), 1912, A., i, 905.
- 4:4'-Dimethoxydicinnamonylchlorocarbonyl and its methyl ether and dichloride** (STRAUS, LUTZ, and HÜSSY), 1910, A., i, 564.
- Dimethoxydicoumaranone** (*dimethoxybis-ketocoumaran*) (RUHEMANN), 1903, T., 1133.
- Di-*p*-methoxydi-*α*-ethoxybenzylidene-hydrazine** (STOLLÉ and BAMBACH), 1906, A., i, 710.
- 2:6-Dimethoxydiethylaniline** and its platinichloride and dinitro-derivative (KAUFFMANN and FRANCK), 1907, A., i, 1094.
- Dimethoxydiethylphthalides**, isomeric (SIMONIS and ARAND), 1909, A., i, 933.
- 2:7-Dimethoxy-9:10-difurylacenaphthylene** (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 963.
- Dimethoxydihydrocinnamic acid**. See Dimethoxyphenylpropionic acid.
- 6:7-Dimethoxy-3:4-dihydroisquinoline** and its salts (PYMAN), 1909, T., 1619; P., 217.
- 2:7-Dimethoxy-1:8-di-*p*-methoxybenzoylnaphthalene** (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.
- 6:7-Dimethoxy-2-*mp*-dimethoxyphenyl-*α*-naphthol** and its alkali salts, and azo-dyes from (DECKER), 1908, A., i, 806.
- 3:6-Dimethoxy-4-dimethylaminoethoxyphenanthrene** and its picate and methiodide (KNORR), 1905, A., i, 813.
- γδ-Dimethoxy-βε-dimethylhexane-βε-diol** (PURDIE and YOUNG), 1910, T., 1534; P., 198.
- pp*'-Dimethoxydiphenacylamine hydrochloride** (TUTIN), 1910, T., 2507.
- Dimethoxydiphenyl**, dinitrodihydroxy- (KÜHLING), 1905, A., i, 888.
- 2:2'-Dimethoxydiphenyl sulphide** and its sulphone (MAUTHNER), 1906, A., i, 422.
- 4:4'-Dimethoxydiphenyl and tetranitro-** (WINSTON), 1904, A., i, 274.
- Dimethoxydiphenyls**, 2:2'- and 4:4'- (ULLMANN), 1904, A., i, 727.
- 2:7-Dimethoxy-9:10-diphenylacenaphthene** (BESCHKE and KITAJ), 1909, A., i, 918.
- 2:7-Dimethoxy-9:10-diphenylacenaphthene glycol** (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.
- 2:7-Dimethoxy-9:9-diphenylacenaphthenone** and an isomeride (BESCHKE, BEITLER, and STRUM), 1909, A., i, 917.

- 2:7-Dimethoxy-9:10-diphenylacenaphthylene** (BESCHKE, BEITLER, STRUM, and KITAJ), 1909, A., i, 917; (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 962.
- 3:5-Dimethoxydiphenylamine**, 2:6-*dinitro*- (BLANKSMA), 1908, A., i, 979.
- Dimethoxydiphenylazomethylene** (STAUDINGER and KUPFER), 1911, A., i, 752.
- 2:5-Dimethoxydiphenylbenzylcarbinol** (KAUFFMANN and GROMBACH), 1906, A., i, 285.
- 3:3'-Dimethoxydiphenylbisdiazonium chloride**, compound of, with antimony trichloride (MAY), 1912, T., 1040.
- 4:4'-Dimethoxydiphenylcarboxylic acid** (LIEBERMANN and KARDOS), 1912, A., i, 466.
- 2:2'-Dimethoxydiphenyl-5:5'-dialdehyde**, synthesis of (GATTERMANN), 1908, A., i, 35.
- 4:5-Dimethoxy-4:5-diphenyldihydroglyoxalone**, *syn*- and *anti*- (BILTZ and RIMPEL), 1909, A., i, 743.
- 3:3'-Dimethoxydiphenyl-4:4'-diphthalamide acid** and its sodium salt (CAIN and BRADY), 1912, T., 2307.
- 2:9-Dimethoxydiphenyleneazone**, 3:8-*diamino*- (ULLMANN and DIETERLE), 1904, A., i, 270.
- 2:2'-Dimethoxy-*s*-diphenylethane** (IRVINE and MOODIE), 1907, T., 540.
- 4:4'-*dinitro*- (GREEN, DAVIES, and HORSFALL), 1907, T., 2081.
- 2:4'-Dimethoxy-*s*-diphenylethane** (STOERMER and FRIEMEL), 1911, A., i, 632.
- 3:3'-Dimethoxy-*s*-diphenylethane**, 4:4'-*dihydroxy*- and its bromide (MANCHOT and ZAHN), 1906, A., i, 752.
- 4:4'-Dimethoxy-*s*-diphenylethane** and its bromide (MANCHOT and ZAHN), 1906, A., i, 752.
- 2:5-Dimethoxydiphenylethylcarbinol** (KAUFFMANN and GROMBACH), 1906, A., i, 285.
- 4:5-Dimethoxydiphenylglyoxalone** (BILTZ and STELLBAUM), 1905, A., i, 674.
- 2:2'-Dimethoxydiphenylmethane**, 5:5-*di*-bromo- (DIELS and ROSENEMUND), 1906, A., i, 674.
- 3:3'-Dimethoxydiphenylmethane**, 4:4'-*diamino*-, and its diacetyl derivative (FINGER), 1909, A., i, 518.
- 4:4'-Dimethoxydiphenylmethane**, 3:3'-*diamino*- and 3:3-*dinitro*- (BADISCHE ANILIN- & SODA-FABRIK), 1903, A., i, 558.
- di- α -chloro*- (STAUDINGER, CLAR, and CZAKO), 1911, A., i, 625.
- 2:5-Dimethoxydiphenylmethylcarbinol** (KAUFFMANN and GROMBACH), 1906, A., i, 285.
- 2:5-Dimethoxy- $\alpha\alpha$ -diphenylpropylene** and its bromo-derivatives (KAUFFMANN and GROMBACH), 1906, A., i, 285.
- pp'*-**Dimethoxy-2:5-diphenylpyrazine**, and its salts (TUTIN), 1910, T., 2505; P., 244; (TUTIN and CATON), 1910, T., 2531; P., 245.
- pp'*-**Dimethoxy-2:6-diphenylpyrazine**, and its salts (TUTIN), 1910, T., 2506; P., 244; (TUTIN and CATON), 1910, T., 2532; P., 245.
- 2:6-Dimethoxy-*s*-diphenylthiocarbamide** (KAUFFMANN and FRANOK), 1907, A., i, 1093.
- 5:6-Dimethoxydiphenyltriazine**, 3-*hydroxy*-, and its acetyl derivative (BILTZ and ARND), 1905, A., i, 675.
- 8:8'-Dimethoxy-6:6'-diquinolyl-2:2'-diphenyl-4:4'-dicarboxylic acid** (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1912, A., i, 812.
- 2:2'-Dimethoxydistyryl ketone** and 5:5'-*di*bromo- (FABINYI and SZÉKI), 1907, A., i, 940.
- 4:4'-Dimethoxydistyryl ketone** (*dianisylideneacetone*) and its hydrobromides and dihydrosulphate (VORLÄNDER and HAYAKAWA), 1904, A., i, 66.
- compound of, with a benzene solution of phosphorus pentachloride (STRAUS and ECKER), 1906, A., i, 860.
- Dimethoxy-*m*-ditolyl** and *tetranitro*- (WINSTON), 1904, A., i, 274.
- Dimethoxyeosin** (FRIEDL, WEIZMANN, and WYLER), 1907, T., 1587.
- $\alpha\alpha$ -Dimethoxyethane**, $\beta\beta$ -*dichloro*- (ODDO and MAMELI), 1904, A., i, 281.
- $\alpha\delta$ -Dimethoxy- γ -ethoxy- $\Delta\beta$ -butylene** (GAUTHIER), 1909, A., i, 355.
- 3':4'-Dimethoxy-7-ethoxy-flavanone** and *isonitroso*-, and -*flavonol* and its acetyl derivative (v. KOSTANECKI, LAMPE, and TAMBOR), 1904, A., i, 442.
- $\beta\epsilon$ -Dimethoxy- δ -ethoxy- $\Delta\gamma$ -hexylene** (GAUTHIER), 1909, A., i, 355.
- 3:4-Dimethoxy-8-ethoxyphenanthrene**, and its picrate (PSCHORR and LOEWEN), 1910, A., i, 424.
- 3:4-Dimethoxy-8-ethoxyphenanthrene-5-carboxylic acid** (PSCHORR and LOEWEN), 1910, A., i, 424.
- 3:4-Dimethoxy-8-ethoxyphenanthrene-9-carboxylic acid** (PSCHORR and ZEIDLER), 1910, A., i, 425.

- 2:5-Dimethoxy-3-ethoxy-1-propylbenzene and 4-nitro- (THOMS), 1903, A., i, 558.
- 3:4-Dimethoxy-8-ethoxy-5-vinylphenanthrene (PSCHORR and LOEWEN), 1910, A., i, 424.
- 4:5-Dimethoxy-2- β -ethylaminoethylbenzaldehyde (PYMAN), 1909, T., 1745.
- 6:7-Dimethoxy-2-ethyl-3:4-dihydroisoquinolinium hydroxide, salts of (PYMAN), 1909, T., 1745.
- Dimethoxy-2-ethylisoquinoline and its hydrochloride (DECKER and PSCHORR), 1904, A., i, 927.
- 6:7-Dimethoxy-2-ethyltetrahydroisoquinoline and its hydrochloride (PYMAN), 1909, T., 1746.
- 6:7-Dimethoxy-2-ethyltetrahydroisoquinoline (PYMAN), 1909, T., 1746.
- 1- $\alpha\beta$ -Dimethoxyethylthiolanthraquinone (GATTERMANN), 1912, A., i, 1003.
- Dimethoxyferric acetate and formate (HOFMANN and BUGGE), 1907, A., i, 887.
- 3:4-Dimethoxy-flavanone and -flavone (WOKER, V. KOSTANECKI, and TAMBOR), 1904, A., i, 184.
- 3':4'-Dimethoxy-flavanone and 3-bromo- and 3-isonitroso-, and -flavone (BERSTEIN, FRASCHINA, and V. KOSTANECKI), 1905, A., i, 606.
- 5:7-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (DOBRYŃSKI and V. KOSTANECKI), 1904, A., i, 764.
- 5:7-Dimethoxy-flavanone, 3:6:8-tribromo-, and -flavone, 6:8-dibromo- (V. KOSTANECKI and LAMPE), 1904, A., i, 911.
- 6:2'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetate (KATSCHALOWSKY and V. KOSTANECKI), 1904, A., i, 608.
- 6:3'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (V. KOSTANECKI and OTTMANN), 1904, A., i, 442.
- 6:4'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (V. KOSTANECKI and STOPPANI), 1904, A., i, 441.
- 7:2'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (V. KOSTANECKI and V. SZLAGIER), 1905, A., i, 78.
- 7:3'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (V. KOSTANECKI and WIDMER), 1905, A., i, 78.
- 7:4'-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (JUPPEN and V. KOSTANECKI), 1905, A., i, 79.
- 7:8-Dimethoxyflavanone and its compounds with aldehydes (KATSCHALOWSKY and V. KOSTANECKI), 1904, A., i, 912.
- 7:8-Dimethoxy-flavanone and 3-isonitroso-, and -flavonol and its acetyl derivative (DOBRYŃSKI and V. KOSTANECKI), 1904, A., i, 764.
- 3':4'-Dimethoxyflavonol and its acetyl derivative (BERSTEIN, FRASCHINA, and V. KOSTANECKI), 1905, A., i, 607.
- 3:6-Dimethoxyfluoran (KEHRMANN, DENGLE, and SCHEUNERT), 1909, A., i, 250.
- Dimethoxyfluorenone (ULLMANN and DENZLER), 1907, A., i, 143.
- Dimethoxyfluorescein and its acetyl derivative (FRIEDL, WEIZMANN, and WYLER), 1907, T., 1587; P., 214.
- tetrabromo-. See Dimethoxyeosin.
- $\alpha\gamma$ -Dimethoxyheptane, synthesis of (HAMONET), 1907, A., i, 581.
- $\alpha\eta$ -Dimethoxyheptane (DIONNEAU), 1907, A., i, 747.
- $\alpha\eta$ -Dimethoxyheptane, δ -chloro- (HAMONET), 1906, A., i, 58.
- $\alpha\eta$ -Dimethoxyheptan- δ -ol (HAMONET), 1906, A., i, 58.
- Dimethoxyhexa-acetylgalloyl-leucodigallic acid (NIERENSTEIN), 1912, A., i, 471.
- $\beta\epsilon$ -Dimethoxy- $\Delta\gamma$ -hexinene (GAUTHIER), 1909, A., i, 355.
- 5:6-Dimethoxy-1:2-hydrindochroman (PERKIN and ROBINSON), 1907, T., 1096.
- 4:5-Dimethoxy-1-hydrindone and its isonitroso-derivative (PERKIN and ROBINSON), 1906, P., 160; 1911, P., 58.
- 5:6-Dimethoxy-1-hydrindone and isonitroso- (PERKIN and ROBINSON), 1907, T., 1080.
- 2-anisylidene, 2-benzylidene, 2-piperonylidene, and 2-veratrylidene derivatives of (PERKIN and ROBINSON), 1907, T., 1102.
- 5:6-Dimethoxy-1-hydrindone, 2-amino-, and its hydrochloride, platinichloride and benzoyl derivative (ROBINSON), 1909, T., 2173; P., 296.
- 7-nitro- (PERKIN, ROBINSON, and THOMAS), 1909, T., 1980.
- o -Dimethoxyhydrobenzoin, preparation and reduction of, and its diacetyl and diphenylurethane derivatives (IRVINE and MOODIE), 1907, T., 588; P., 62.

- 5:6-Dimethoxy-2-hydroxymethylene-1-hydrindone (ENGELS, PERKIN, and ROBINSON), 1908, T., 1153.
- 2:5-Dimethoxy-1- α -hydroxyisopropylbenzene and -1- α -methylvinylbenzene (KLAGES), 1904, A., i, 1004.
- 4':5'-Dimethoxy-2:3-indeno-1:4-benzopyranol and 7-hydroxy-, salts of (PERKIN and ROBINSON), 1908, T., 1103.
- 7:4'-Dimethoxy-4:3-indeno-1:4-benzopyranol, 5'-hydroxy-, salts of (ENGELS, PERKIN, and ROBINSON), 1908, T., 1147.
- 5:6-Dimethoxy-2:3-indeno-1:4-benzopyranol hydrochloride, 7-hydroxy- (PERKIN and ROBINSON), 1907, P., 150.
- 5:5'-Dimethoxyindigotin, synthesis of (WIELAND, SEMPER, and GMELIN), 1909, A., i, 610.
- 4:4', 5:5', and 7:7'-Dimethoxyindigotins (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 319.
- 2:2'-Dimethoxyindigo-white (KALB), 1909, A., i, 966.
- 5:6-Dimethoxy-1(2')-indoxylcoumaranone (FELIX and FRIEDLÄNDER), 1910, A., i, 279.
- 3:4-Dimethoxymandelic acid and its salts (VANZETTI), 1904, A., i, 249.
- 3:4-Dimethoxy- α -methoxyphenyleinamic acid, 2-amino-, and 2-nitro- (PSCHORR, DICKHÄUSER, and ZEIDLER), 1912, A., i, 766.
- 4:5-Dimethoxy-*o*-methylacetophenone. See 4:5-Dimethoxy-*o*-tolyl methyl ketone.
- 4:5-Dimethoxy-2- β -methylaminoethylbenzaldehyde (PYMAN), 1909, T., 1270; P., 190.
- 4:6-Dimethoxy-2- β -methylaminoethylbenzaldehyde and its salts (SALWAY), 1911, T., 1325; P., 192.
- 3:5-Dimethoxymethylaniline, 2:6-dinitro- (BLANKSMA), 1908, A., i, 979.
- 3:4-Dimethoxy-1-methylantraquinone. See 1-Methylalizarin 3:4-dimethyl ether.
- 4:6(7)-Dimethoxy-1-methylantraquinone (BENTLEY, GARDNER, WEIZMANN, and TEMPERLEY), 1907, T., 1634.
- 1:3-Dimethoxy-2-methylantraquinone (BARROWCLIFF and TUTIN), 1907, T., 1913; P., 249.
- 2:4'-Dimethoxy-5-methylbenzophenone (AUWERS and RIETZ), 1907, A., i, 938.
- 2:4-Dimethoxy-6-methylbenzoylacetophenone (TAMBOR), 1908, A., i, 350.
- 2:6-Dimethoxy-4-methylbenzoylacetophenone (LUDWINOWSKY and TAMBOR), 1907, A., i, 75.
- 4(5):2'-Dimethoxy-5'-methyl-2-benzoylbenzoic acid (BENTLEY, GARDNER, WEIZMANN, and TEMPERLEY), 1907, T., 1634.
- 7:8-Dimethoxy-2-methylchromone (BLUMBERG and v. KOSTANECKI), 1903, A., i, 644.
- 2:5-Dimethoxy- α -methylcinnamic acid (THOMS), 1903, A., i, 415.
- 3:5-Dimethoxy-2-methylcoumarilic acid, ethyl ester (v. KOSTANECKI and TAMBOR), 1909, A., i, 320.
- 3:5-Dimethoxy-2-methylcoumarone (v. KOSTANECKI and TAMBOR), 1909, A., i, 320.
- 5:6-Dimethoxy-2-methylcoumarone (v. GRAFFENRIED and v. KOSTANECKI), 1910, A., i, 631.
- 6:7-Dimethoxy-2-methyl-1:2-dihydroisoquinoline, 5(or 8)-nitro- (PYMAN), 1910, T., 270.
- 6:7-Dimethoxy-2-methyl-3:4-dihydroisoquinolinium hydroxide, salts of (PYMAN), 1909, T., 1271; P., 190.
- 5:6-Dimethoxy-3:4-methylenedioxyacetophenone (DELÉPINE), 1909, A., i, 643.
- 2:5-Dimethoxy-3:4-methylenedioxy-1-allylbenzene (*parsley-apiole*) (THOMS), 1904, A., i, 742.
- 5:6-Dimethoxy-3:4-methylenedioxy-1-allylbenzene (*dill-apiole*) (THOMS), 1904, A., i, 742.
- presence of, in oil of samphire (DELÉPINE), 1909, A., i, 642.
- 2:4-Dimethoxy-4':5'-methylenedioxychalkone (GÖSCHKE and TAMBOR), 1912, A., i, 30.
- 5:6-Dimethoxy-3:4-methylenedioxyhydratropaldehyde and its oxime, semicarbazone and corresponding acid (DELÉPINE), 1909, A., i, 642.
- 3:4-Dimethoxy-3':4'-methylenedioxy-2-hydroxymethyl-6'-vinylstilbene (*berberilene*) (McDAVID, PERKIN, and ROBINSON), 1912, T., 1226; P., 161.
- 3:4-Dimethoxy-5:6-methylenedioxyphenanthrene-8-carboxylic acid (GADAMER and KUNTZE), 1911, A., i, 1013.
- 2:4-Dimethoxy-3':4'-methylenedioxystilbene- β -carboxylic acid (v. KOSTANECKI and SULSER), 1905, A., i, 353.
- 3:4-Dimethoxy-5:6-methylenedioxy-8-vinylphenanthrene (GADAMER and KUNTZE), 1911, A., i, 1013.
- Dimethoxymethyl ether (DESCUDÉ), 1904, A., i, 706.

- 3':4'-Dimethoxy-7-methylflavone, 5-hydroxy-, and its sodium salt (TAMBOR), 1908, A., i, 359.
- 6:7-Dimethoxy-1-methylnaphthalene (LUFF, PERKIN, and ROBINSON), 1910, T., 1140; P., 133.
- Di-*o*-methoxy-1-methylnaphthalene, 2-chloro- (SACHS and BRIGL), 1911, A., i, 720.
- 3:4-Dimethoxy-6-methylphenanthrene and its dibromide and -9-carboxylic acid (PSCHORR and QUADE), 1906, A., i, 849.
- 3:4-Dimethoxy-8-methylphenanthrene and its -9-carboxylic acid (PSCHORR and TAPPEN), 1906, A., i, 849.
- 2:4-Dimethoxy-5-methylpyrimidine and 6-chloro- (GERNGROSS), 1905, A., i, 943.
- Dimethoxy-2-methylisoquinolone and its salts (PSCHORR, STÄHLIN, and SILBERBACH), 1904, A., i, 611; (DECKER and PSCHORR), 1904, A., i, 927.
- 6:7-Dimethoxy-2-methyltetrahydroisoquinoline and its salts, and 1-cyano- (PYMAN), T., 1272; P., 190.
- 6:7-Dimethoxy-2-methyltetrahydroisoquinolone (PYMAN), 1909, T., 1272; P., 190.
- hydrate (PYMAN), 1910, T., 270.
- 2:5-Dimethoxy-1- α -mono- and - $\alpha\beta$ -dimethylvinylbenzenes (KAUFFMANN and BEISSWENGER), 1905, A., i, 280; ii, 218.
- 3':4'-Dimethoxy- α -naphtha-flavanone and isonitroso-, and -flavonol and its sodium salt and acetyl derivative (BIGLER and v. KOSTANECKI), 1907, A., i, 77.
- 1:2-Dimethoxynaphthalene (BEZDZIK and FRIEDLÄNDER), 1909, A., i, 416.
- 1:5-Dimethoxynaphthalene and its mono- and di-nitro-derivatives (BENTLEY, ROBINSON, and WEIZMANN), 1907, T., 107.
- 2:6-Dimethoxynaphthalene (WILLSTÄTTER and PARNAS), 1907, A., i, 426.
- Dimethoxynaphthalenes, 1:5-, 2:3-, and 2:6- (KAUFFMANN and BEISSWENGER), 1903, A., i, 330.
- Dimethoxynaphthoylbenzoic acid, hydroxy- (BENTLEY, FRIEDL, and WEIZMANN), 1907, T., 1591; P., 215.
- 1':5'-Dimethoxy-2- β -naphthoylbenzoic acid (BENTLEY, FRIEDL, THOMAS, and WEIZMANN), 1907, T., 425.
- 4(or 5):1'-Dimethoxy-2- β -naphthoylbenzoic acid (BENTLEY, FRIEDL, THOMAS, and WEIZMANN), 1907, T., 421.
- α -Dimethoxynonane (v. BRAUN and DANZIGER), 1912, A., i, 597.
- 4:4'-Dimethoxyoxalyldiacetophenone and its dioximino-derivative (WIDMAN and VIRGIN), 1909, A., i, 657.
- 2:5-Dimethoxy- α -methylbenzene and its phenylhydrazone (KAUFFMANN and GROMBACH), 1906, A., i, 287.
- α -Dimethoxy- $\Delta\beta$ -pentene, $\beta\gamma$ -dibromo- (LESPIEAU), 1912, A., i, 331.
- α -Dimethoxy- $\Delta\beta$ -pentinene (LESPIEAU), 1912, A., i, 331.
- 1:2-Dimethoxyphenanthraphenazine, and its salts (PISOVSCHI), 1910, A., i, 643.
- 4:5-Dimethoxyphenanthraquinone (SCHMIDT and KÄMPF), 1904, A., i, 71.
- 3:4-Dimethoxyphenanthrene (*dimethylmorphole*), 8-amino-, hydrochloride of (PSCHORR, EINBECK, and SPANGENBERG), 1907, A., i, 635.
- 9-amino-, and its urethane and 9-carboxylic acid and its ethyl ester, azide, and hydrazide (KNORR and HÖRLEIN), 1907, A., i, 548.
- 8-bromo-, and its 9-carboxylic acid and 8-hydroxy-lactone of (PSCHORR and POPOVICI), 1906, A., i, 850.
- 3:6-Dimethoxyphenanthrene, 4-hydroxy-. See Thebaol.
- 2:3-Dimethoxyphenanthrene-10-carboxylic acid (SCHORR and TREIDEL), 1912, A., i, 777.
- 3:4-Dimethoxyphenanthrenecarboxylic acid (PSCHORR, JAECKEL, and FECHT), 1903, A., i, 195.
- 3:4-Dimethoxyphenanthrene-9-carboxylic acid, ethyl ester, and its hydrazide and urethane (PSCHORR, EINBECK, and SPANGENBERG), 1907, A., i, 635.
- 3:4-Dimethoxyphenanthrene-10-carboxylic acid and 1-bromo- (PSCHORR, SELLE, KOCH, STOOF, and TREIDEL), 1912, A., i, 777.
- 3:6-Dimethoxyphenanthrene-9-carboxylic acid, 4-hydroxy- (PSCHORR, SEYDEL, and STÖHRER), 1903, A., i, 168.
- 3:4-Dimethoxyphenanthrene-8:9-dicarboxylic acid and anhydride (PSCHORR and TAPPEN), 1906, A., i, 850.
- 3:4-Dimethoxy-8-phenanthrol (PSCHORR, EINBECK, and SPANGENBERG), 1909, A., i, 635.
- Dimethoxyphenanthryl glycol and its acetate (PSCHORR and KARO), 1906, A., i, 878.
- 1:9-Dimethoxyphenazine, 2:3-diamino-8-hydroxy- (FICHTER and SCHWAB), 1906, A., i, 842.
- 3:6-Dimethoxyphenazonium salts (KEHRMANN and VOGT), 1910, A., i, 409.

- 3:6-Dimethoxyphenazoxonium** methosulphate chloride, and platinichloride (KEHRMANN and VOGT), 1910, A., i, 409.
- 2:3-Dimethoxyphenol** (HERZIG and POL-LAK), 1903, A., i, 346.
- 2:5-Dimethoxyphenol**, 4-amino-, and its acetyl derivative, and 4-nitroso-, and their derivatives (FABINYI and SZÉKI), 1911, A., i, 856.
- 3:4-Dimethoxyphenol**, 6-amino-, and its benzoyl derivatives (FABINYI and SZÉKI), 1907, A., i, 45.
- 6-nitroso-, and its acyl derivatives (FABINYI and SZÉKI), 1907, A., i, 45.
- 2:5-Dimethoxyphenoxycetic acid**, 4-amino-, acetyl derivative (FABINYI and SZÉKI), 1911, A., i, 856.
- Dimethoxyphenyl-**. See also Phenyl-di-methoxy-
- Dimethoxyphenyl sulphide**, tetranitro- (BLANKSMA), 1904, A., i, 577.
- 1:4-Dimethoxyphenyl diiododichloride** and its diiodoso-derivative (KAUFFMANN and FRITZ), 1909, A., i, 96.
- 2:6-Dimethoxyphenyl carbamate** (BASLER CHEMISCHE FABRIK), 1908, A., i, 635.
- Di-*m*-methoxyphenyl sulphide** (MAUTHNER), 1906, A., i, 949.
- Di-*p*-methoxyphenyl sulphide** and sulphoxide (SMILES and LE ROSSIGNOL), 1908, T., 760.
- 2:4-Dimethoxyphenylacetic acid** (PSCHORR and KNÖFFLER), 1911, A., i, 669.
- 3:4-Dimethoxyphenylacetic acid**, 5- and 6-bromo-, and ethyl ester of the latter (PSCHORR, SELLE, KOCH, STOOFF, and TREIDEL), 1912, A., i, 776.
- 2:3-Dimethoxyphenylacetomethylamide** (DOUETTEAU), 1911, A., i, 973.
- 4:4'-Dimethoxyphenylacetoneitrile** (BISTRZYCKI, PAULUS, and PERRIN), 1911, A., i, 868.
- Dimethoxyphenyl-aminoacetone** and its picrate, and -nitroacetone (RIMINI), 1905, A., i, 199.
- α -2:4'-Dimethoxyphenyl-2-amino-3:4-dimethoxycinnamic acid** (PSCHORR and KNÖFFLER), 1911, A., i, 669.
- 2:5-Dimethoxyphenylaminoformic acid**, 4-hydroxy-, ethyl ester and its derivatives (FABINYI and SZÉKI), 1911, A., i, 856.
- 2:4'-Dimethoxy-2-phenylbenzo-1:4-pyranol salts** (PERKIN, ROBINSON, and TURNER), 1908, T., 1114.
- α -3:4-Dimethoxyphenyl- $\alpha\beta$ -*di*bromo- and - β -bromo- α -hydroxyethanes** (BARGER and JOWETT), 1905 T., 972 ; P., 205.
- 3:4-Dimethoxyphenyl- $\alpha\beta$ -*di*bromopropionic acid**, ethyl ester (PERKIN and SCHIESS), 1903, P., 15 ; 1904, T., 164.
- α -2:3-Dimethoxyphenylcinnamic acid**, *o*-amino-, and *o*-nitro- (PSCHORR and TREIDEL), 1912, A., i, 777.
- 3:4-Dimethoxyphenylcinnamic acid**, *o*-amino- α -6-bromo-, and *o*-nitro- α -6-bromo- (PSCHORR, SELLE, KOCH, STOOFF, and TREIDEL), 1912, A., i, 776.
- 3:5-Dimethoxy-2-phenylcoumarilic acid** (MOTYLEWSKI), 1909, A., i, 822.
- 4:4'-Dimethoxy- β -phenylcoumarin** (BARGELLINI and LEONARDI), 1911, A., i, 902.
- 3:5- and 5:6-Dimethoxy-2-phenylcoumarones** (MOTYLEWSKI), 1909, A., i, 822.
- 3:4-Dimethoxyphenyl- α -cyanoacrylic acid**, ethyl ester (PICCININI), 1904, A., i, 920.
- bromo- (PICCININI), 1905, A., i, 599.
- 4:5-Di-*p*-methoxyphenyl-1:3-dimethyl-dihydroglyoxalone**, 4:5-*di*hydroxy- (BILTZ and KREBS), 1909, A., i, 743.
- 5:5-Di-*p*-methoxyphenyl-1:3-dimethyl-hydantoin** (BILTZ and KREBS), 1909, A., i, 743.
- $\alpha\epsilon$ -Di-*p*-methoxyphenyl- γ -diphenyl-methylene- $\Delta^{\alpha\delta}$ -pentadiene** (STAUDINGER), 1903, A., i, 412.
- 3:4-Dimethoxyphenylethylamine** and its hydrochloride (MANNICH and JACOBSON), 1910, A., i, 168 ; (ROSEN-MUND, MANNICH, and JACOBSON), 1912, A., i, 967.
- β -3:5-Dimethoxyphenylethylamine**, 2(4)-chloro-, hydrochloride (SALWAY), 1911, T., 1323.
- 2:7-Dimethoxy-9-phenylfluorone**, 3-hydroxy-, and its salts (KEHRMANN and GÜNTHER), 1912, A., i, 1012.
- 2:5-Dimethoxyphenylglyoxalamide** (MAUTHNER), 1909, A., i, 161.
- 2:5-Dimethoxyphenylglyoxylic acid**, ethyl ester (KAUFFMANN and GROMBACH), 1906, A., i, 287.
- 2:4-Dimethoxyphenyl 2-hydroxystyryl ketone**, and the action of hydrochloric acid on, and its potassium derivative (PERKIN, ROBINSON, and TURNER), 1908, T., 1109.
- Di-*p*-methoxyphenylmalonic acid**, methyl and ethyl esters (GUYOT and ESTÉVA), 1909, A., i, 306.
- 2:4- and 3:4-Dimethoxyphenylmeconine** (JONES, PERKIN, and ROBINSON), 1912, T., 261.

- 2:4-Dimethoxyphenyl methoxymethyl ketone**, 6-hydroxy- (*o*-hydroxyfisetol trimethyl ether), and its oxime (HERZIG and HOFMANN), 1909, A., i, 165.
- 2:3-Dimethoxyphenylmethylcarbinol** and its phenylurethane (PAULY, v. BUTTLAR, and LOCKEMANN), 1911, A., i, 785.
- 3:4-Dimethoxyphenylmethylcarbinol**, and its acetate, chloride and ethyl ether (MANNICH and NEUMANN), 1910, A., i, 412.
- α -2':4'-Dimethoxyphenyl-2-nitro-3:4-dimethoxycinnamic acid** (PSCHORR and KNÖFFLER), 1911, A., i, 669.
- 2:5-Di-*p*-methoxyphenyl-1:3:4-oxadiazole** and β -triazole and their compounds with silver nitrate (STOLLÉ and BAMBACH), 1906, A., i, 710.
- α -Di-*p*-methoxyphenylpentan- γ -one** (BORSCHÉ), 1912, A., i, 194.
- 4-(3':5'-)Dimethoxyphenyl-2-phenyl-1:4-dihydropyran**, 7-hydroxy-, and its acetate (BÜLOW and RIESS), 1903, A., i, 715.
- 5-Dimethoxyphenyl-3-phenylisooxazole** (BÜLOW and RIESS), 1903, A., i, 101.
- 2:4-Dimethoxyphenylphthalide** (TAMBOR and SCHÜRCH), 1910, A., i, 559.
- 2:4- and 3:4-Dimethoxyphenylphthalides** (JONES, PERKIN, and ROBINSON), 1912, T., 260.
- 3:4-Dimethoxyphenylpropionic acid** (PERKIN and SCHIESS), 1903, P., 15; 1904, T., 164.
- β -3:5-Dimethoxyphenylpropionamide** (SALWAY), 1911, T., 1321; P., 192.
- α -Dimethoxy- β -phenylpropionic acid** methyl ester and sodium salt (MOURÉU), 1903, A., i, 698.
- 2:3-Dimethoxy- β -phenylpropionic acid** (PERKIN, ROBERTS, and ROBINSON), 1911, P., 58.
- 3:4-Dimethoxyphenylpropionic acid** (PERKIN and ROBINSON), 1907, T., 1079.
- 3:5-Dimethoxy- β -phenylpropionic acid**, and its amide (SALWAY), 1910, T., 2417.
- s*-Di-*o*-methoxyphenylpropionylhydrazide** (PSCHORR and EINBECK), 1905, A., i, 590.
- α -2:3-Dimethoxyphenyl-*n*-propyl alcohol** (DOUETTEAU), 1912, A., i, 621.
- 3:4-Dimethoxyphenylisopropylamine**, and its hydrochloride (MANNICH and JACOBSON), 1910, A., i, 167; (ROSEN-MUND, MANNICH, and JACOBSON), 1912, A., i, 967.
- 2:3-Dimethoxyphenyl- Δ^1 -propylene** (DOUETTEAU), 1912, A., i, 621.
- 3:4-Dimethoxyphenylisopropyltrimethylammonium iodide** (ROSEN-MUND), 1911, A., i, 34.
- 3:4-Dimethoxyphenylpyruvic acid** (KROPP, DECKER, and ZOELLNER), 1909, A., i, 388.
- 3-*op*-Dimethoxyphenylquinoxaline**, 2-acetyl, and its semicarbazone (SACHS and HEROLD), 1907, A., i, 629.
- 2:5-Dimethoxy- α -phenylstilbene** and its bromo-derivatives (KAUFFMANN and GROMBACH), 1905, A., i, 281; 1906, A., i, 286.
- 2:5-Dimethoxy- α -phenylstyrene** and its bromo-derivative (KAUFFMANN and GROMBACH), 1906, A., i, 286.
- 4:4'-Dimethoxyphenylstyrylbromocarb-inol** and its methyl ether (STRAUS, KRIER, and LUTZ), 1910, A., i, 568.
- 4:4'-Dimethoxyphenylstyryldibromomethane** and its derivatives (STRAUS, KRIER, and LUTZ), 1910, A., i, 568.
- Di-*p*-methoxyphenylstyrylchlorobromomethane** and its derivatives (STRAUS, KRIER, and LUTZ), 1910, A., i, 568.
- 4:4'-Dimethoxyphenylstyrylchlorocarb-inol** and its methyl ether (STRAUS, KRIER, and LUTZ), 1910, A., i, 567.
- Di-*p*-methoxyphenyl styryl ketone** and its derivatives (STRAUS, KRIER, and LUTZ), 1910, A., i, 566.
- Di-*p*-methoxyphenylsuccinamide** and dinitro- (FICI), 1903, A., i, 162.
- 2:5-Dimethoxyphenylthiocarbamide** (KAUFFMANN and FRITZ), 1910, A., i, 377.
- Dimethoxyphenyl-*p*-tolylmethane** (MAC-KENZIE), 1910, P., 170.
- 2:7- and 2:8-Dimethoxy-9-phenylxan-then-9-ol** (v. BAEYER, AICKELIN, DIEHL, HALLENSLEBEN, and HESS), 1910, A., i, 252.
- 3:6-Dimethoxy-9-phenylxanthonium-2'-carboxylic acid**, methyl and ethyl esters, salts of (KEHRMANN and SCHEUNERT), 1910, A., i, 407.
- 3:6-Dimethoxy-9-phenylxanthylum** salts and methyl and ethyl ethers, (KEHRMANN, DENGELER and SCHEUNERT), 1909, A., i, 250.
- 3:6-Dimethoxy-9-phenylxanthylum-2'-carboxylic acid**, methyl ester, and its salts (KEHRMANN, DENGELER, and SCHEUNERT), 1909, A., i, 250.
- 2:5-Dimethoxyphthalic acid** and its anhydride (PERKIN and WEIZMANN), 1906, T., 1658.
- 3:4-Dimethoxyphthalic acid**. See Hemipinic acid.
- 4:5-Dimethoxyphthalic acid**. See *m*-Hemipinic acid.

- 4:6-Dimethoxyisophthalic acid (EYKMAN, BERGEMA, and HENRARD), 1905, A., i, 359.
- p*-Dimethoxyphthalic anhydride and phthalimide (THIELE and GÜNTHER), 1906, A., i, 745.
- 2:2'-Dimethoxyphthalophenone (FERRARIO and NEUMANN), 1911, A., i, 316.
- 6:2'-Dimethoxy-3-piperonylidene flavanone (KATSCHALOWSKY and V. KOSTANECKI), 1904, A., i, 911.
- Dimethoxy-1-propenylbenzenes, 2:5- and 4:5- (THOMS), 1903, A., i, 415.
- $\alpha\beta$ -Dimethoxypropionic acid, esters, amide, and methylamide, preparation and rotation of (FRANKLAND and GEBHARD), 1905, T., 864; P., 189.
- β -Dimethoxypropionic acid, α -chloro-, and its methyl ester (WOHL and SCHWEITZER), 1907, A., i, 194.
- 3:4-Dimethoxypropophenone, derivatives of (MARTEGANI), 1912, A., i, 987.
- 3:4-Dimethoxypropophenone, 6-hydroxy-, derivatives of (BARGELLINI), 1911, A., i, 305; (BARGELLINI and MARTEGANI), 1911, A., i, 855.
- Dimethoxypropophenone-*o*-carboxylic acids, isomeric (SIMONIS and ARAND), 1909, A., i, 933.
- 2:5-Dimethoxy-3-*n*-propoxy-1-propylbenzene and 4-nitro- (THOMS), 1903, A., i, 558.
- 4:5-Dimethoxy-2- β -propylaminocethylbenzaldehyde (PYMAN), 1909, T., 1747.
- 2:5-Dimethoxypropylbenzene, and 4-amino- and its acetyl derivative, and 4-nitro- (THOMS), 1903, A., i, 415.
- 3:5-Dimethoxypropylbenzene (THOMS), 1904, A., i, 47; (SEMMLER), 1908, A., i, 734.
- 3:5-Dimethoxypropylbenzene, dibromo- (RICHTER), 1907, A., i, 523.
- 4:5-Dimethoxypropylbenzene, 2-amino-, and 2-mono-, 2:6-di- and 2:3:6-trinitro- (THOMS), 1903, A., i, 415.
- 3':4'-Dimethoxy-4-isopropylchalcone, 2'-hydroxy- (v. KOSTANECKI and RABINOWITSCH), 1907, A., i, 952.
- 6:7-Dimethoxy-2-propyl-3:4-dihydroisoquinolinium hydroxide, chloride and picrate of (PYMAN), 1909, T., 1747.
- 7:8-Dimethoxy-4'-isopropylflavonol and its acetate and -flavanone and its isonitroso-derivative (v. KOSTANECKI and RABINOWITSCH), 1907, A., i, 953.
- 2: α -Dimethoxy-4-propylphenol, bromo-derivatives (ZINCKE and HAHN), 1904, A., i, 42.
- 6:7-Dimethoxy-2-propyltetrahydroisoquinoline and its hydrochloride (PYMAN), 1909, T., 1748.
- 6:7-Dimethoxy-2-propyltetrahydroisoquinolone (PYMAN), 1909, T., 1748.
- 2:4-Dimethoxypyrimidine, 3:5-dichloro- (SELL), 1912, T., 1948.
- Dimethoxypyrimidine, chloro- (BÜTTNER), 1903, A., i, 659.
- 2:6-Dimethoxypyrimidine and its salts, and 4-chloro-derivative (GABRIEL and COLMAN), 1904, A., i, 103.
- 2:3-Dimethoxypyrrone-6-carbonylhydroxamic acid and its barium salt (AZZARELLO), 1905, A., i, 917.
- 2:3-Dimethoxy- γ -pyrrone-6-carboxylic acid and its methyl ester (PERATONER and CASTELLANA), 1905, A., i, 807.
- 6:7-Dimethoxyisoquinoline and its additive salts (DECKER and KOCH), 1905, A., i, 472.
- synthesis of (RÜGHEIMER), 1909, A., i, 605.
- 6:7-Dimethoxyisoquinolone and its benzyl and 2-methyl derivatives (DECKER and KOCH), 1905, A., i, 473.
- 2:2'-Dimethoxystilbene, 4:4'-dinitro- (GREEN and BADDILEY), 1908, T., 1724; P., 202.
- 2:5-Dimethoxystilbene, β -cyano- (KAUFFMANN and BURR), 1907, A., i, 605.
- 4:4'-Dimethoxystilbene and its dibromide (LAW), 1907, T., 759.
- 4:4'-Dimethoxystilbene, 3:5:3':5'-tetrabromo-, and its dibromide (AUWERS), 1903, A., i, 622.
- Dimethoxystilbeneacetone (v. LIPPMANN and FRITSCH), 1905, A., i, 443.
- 3':4'-Dimethoxystilbene- α -carboxylic acid, 2-hydroxy- (CZAPLICKI, v. KOSTANECKI, and LAMPE), 1909, A., i, 236.
- 2:4-Dimethoxystilbene- β -carboxylic acid (v. KOSTANECKI and SULSER), 1905, A., i, 352.
- 3':4'-Dimethoxystilbene-2:2'-dicarboxylic acid, α -cyano- (GYR), 1907, A., i, 417.
- 3:4-Dimethoxystyrene (BARGER and JOWETT), 1905, T., 972; P., 205.
- 3:4-Dimethoxystyrene, ω -bromo- (MAN-NICH and NEUBERG), 1910, A., i, 412.
- β -nitro- (ROSENMUND), 1911, A., i, 34; 1912, A., i, 449.
- Di-*p*-methoxystyrylbromocarbonyl methyl ether (STRAUS, KRIER, and LUTZ), 1910, A., i, 568.
- Di-*p*-methoxystyryldibromomethane (STRAUS, KRIER, and LUTZ), 1910, A., i, 563.

- 3:4-Dimethoxystyryl cinnamylidene-methyl ketone** (*methylcinnamylidene-cinnamylideneacetone*) (FRANCESCONI and CUSMANO), 1908, A., i, 802.
- 5:2', 5:3', and 5:4'-Dimethoxy-2-styryl-coumarones** (ABELIN and V. KOSTANECKI), 1910, A., i, 631.
- Di-*p*-methoxystyryl ketone**, hydrobromide of (STRAUS, KRIER, and LUTZ), 1910, A., i, 568.
- 3:4-Dimethoxystyryl methyl ketone** (*methylcinnamylideneacetone*), and its hydrochloride (FRANCESCONI and CUSMANO), 1908, A., i, 802.
- 2:6-Di-*p*-methoxystyryl-4-methylpyridine** and its salts (PROSKE), 1909, A., i, 414.
- Di-*p*-methoxystyrylpyrazine** and its additive salts (FRANKE), 1906, A., i, 47.
- 2:6-Di-*p*-methoxystyrylpyridine** and its salts (PROSKE), 1909, A., i, 414.
- d*-Dimethoxysuccinanilic acid** (YOUNG), 1912, P., 143.
- d*-Dimethoxysuccinanilide** (YOUNG), 1912, P., 143.
- d*-Dimethoxysuccinic acid**, its anhydride and methyl hydrogen ester (PURDIE and YOUNG), 1910, T., 1533.
- d*-Dimethoxysuccinyl chloride** (PURDIE and YOUNG), 1910, T., 1532.
- 3:5-Dimethoxytetra-anisyltetrahydrofuran**, 2-hydroxy- (IRVINE and MCNICOLL), 1908, T., 1603; P., 192.
- 3:4-Dimethoxy-2:2:5-tetraphenyltetrahydrofuran** (PURDIE and YOUNG), 1910, T., 1535; P., 198.
- 3:5-Dimethoxy-2:3:4:5-tetraphenyltetrahydrofuran**, 2-hydroxy-, and its triacetyl derivative (IRVINE and MCNICOLL), 1908, T., 955; P., 119.
- 1:4-Dimethoxythioxanthone** (CLARKE and SMILES), 1911, T., 1538.
- 4:5-Dimethoxy-*o*-tolualdehyde** and its oxidation, and hydrazone and semicarbazone (PERKIN and WEIZMANN), 1906, T., 1650.
- and its azine and oxime, synthesis of (GATTERMANN), 1908, A., i, 34.
- 2:4-Dimethoxytoluene**. See Cresorcinol dimethyl ether.
- 3:5-Dimethoxytoluene**. See Orcinol dimethyl ether.
- 4:5-Dimethoxy-*o*-toluic acid**, formation of (PERKIN and WEIZMANN), 1906, T., 1651.
- 4:5-Dimethoxy-*o*-toluidine** and its acetyl derivative (LUFF, PERKIN, and ROBINSON), 1910, T., 1134; P., 132.
- 4:5-Dimethoxy-*o*-toluonitrile** (LUFF, PERKIN, and ROBINSON), 1910, T., 1135; P., 132.
- 4:5-Dimethoxy-*o*-tolylglyoxalic acid** (HARDING and WEIZMANN), 1910, T., 1128.
- 4:5-Dimethoxy-*o*-tolyl methyl ketone** and its phenylhydrazone and semicarbazone (HARDING and WEIZMANN), 1910, T., 1128; P., 130.
- Dimethoxytolyl**. See also Tolyldimethoxy-.
- 4:4'-Dimethoxytriphenylacetoneitrile** (VORLÄNDER), 1911, A., i, 867.
- 2:4-Dimethoxytriphenylcarbinol** (KAUFFMANN and PANNWITZ), 1910, A., i, 394.
- 2:4-Dimethoxytriphenylcarbinol**, 5-chloro- (KAUFFMANN and PANNWITZ), 1912, A., i, 351.
- 2:5-Dimethoxytriphenyl-carbinol** and its ethyl ether and -methane (KAUFFMANN and GROMBACH), 1906, A., i, 286.
- 3:4-Dimethoxytriphenyl-carbinol**, -chloromethane, and -methane (SACHS and THONET), 1904, A., i, 878.
- 3:4-Dimethoxytriphenylcarbinol**, 3':4'-*di*hydroxy- (SACHS and THONET), 1904, A., i, 878.
- 2:4'-Dimethoxytriphenylcarbinol** (KAUFFMANN and PANNWITZ), 1912, A., i, 351.
- op*'-Dimethoxytriphenylmethane** (KAUFFMANN and PANNWITZ), 1912, A., i, 351.
- 2:4-Dimethoxytriphenylmethane**, 5-bromo-, and 5-chloro- (KAUFFMANN and PANNWITZ), 1912, A., i, 351.
- 2:2'-Dimethoxytriphenylmethane-2''-carboxylic acid**, and its salts and methyl ester (FERRARIO and NEUMANN), 1911, A., i, 317.
- 2:5-Dimethoxytritanic acid**, methyl ester (v. LIEBIG), 1908, A., i, 541.
- 3:5-Dimethoxytritanic acid** and its salts, methyl ester, and ether (v. LIEBIG), 1905, A., i, 782.
- 2:4-Dimethoxytritanolethertetrasulphonic acid** and its ammonium salt (v. LIEBIG and HERB), 1908, A., i, 450.
- 2:4-Dimethoxytritanol-5- and -6-sulphonic acids** (v. LIEBIG and HERB), 1908, A., i, 450.
- α -Dimethoxyundecane** (v. BRAUN and DANZIGER), 1912, A., i, 598.
- 5:6-Dimethoxy-2-*o*-veratrylidene-1-hydrindone** (PERKIN, ROBERTS, and ROBINSON), 1911, P., 58.
- 3:4-Dimethoxyvinylphenanthrene** and its picrate and tetrabromo-derivative (PSCHORR, JAECKEL, and FECHT), 1903, A., i, 194.
- 3:4-Dimethoxyvinylphenanthrene, penta-bromo-** (PSCHORR and KARO), 1906, A., i, 878.

- 2:7-Dimethoxyxanthone (V. BAEYER, AICKELIN, DIEHL, HALLENSLEBEN, and HESS), 1910, A., i, 252.
- 3:4-Dimethoxyxanthone (ULLMANN and DENZLER), 1907, A., i, 143.
- Dimethyl trisulphide (STRECKER), 1908, A., i, 386.
- Dimethylacetonerhamnoside and its hydrolysis (PURDIE and YOUNG), 1906, T., 1200; P., 201.
- $\alpha\alpha$ -Dimethyl acids, $\beta\gamma$ -dibromo-, action of alkali carbonates on (COURTOT), 1906, A., i, 788, 925.
- $\alpha\alpha$ -Dimethylacetoacetic acid, methyl ester, action of nitric acid on (PERKIN), 1903, T., 1217.
- $\alpha\alpha$ -Dimethylacetoacetic acid, γ -bromo-, ethyl ester, condensation of, with secondary amines (GAULT and THIRODE), 1910, A., i, 356.
- $\alpha\alpha$ -Dimethylacetonedicarboxylic acid, ethyl ester, and its preparation and reduction (PERKIN and SMITH), 1903, T., 12.
- β -Dimethylacetonedicarboxylic acid, ethyl ester, formation of a tetramethylene ring by condensation of (SCHROETER and STASSEN), 1907, A., i, 532.
- Dimethylacetonylcarbinol (*diacetone alcohol*), oxidation of (KOHN), 1904, A., i, 15.
- 3:4-Dimethylacetophenone and its semicarbazone (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 3:5-Dimethylacetophenone, ω -chloro-2-hydroxy- (FRIES and FINCK), 1909, A., i, 42.
- 4:5-Dimethylacetophenone, ω -chloro-2-amino-, acetyl derivative and hydrochloride (KUNCKELL and SCHNEIDER), 1912, A., i, 914.
- Dimethylacetylacetone and its disemicarbazone (SALKIND), 1905, A., i, 733.
- Dimethylacetylenediureine and its *N:N*-dimethyl derivative and its acetyl derivative (BILTZ and HORMANN), 1908, A., i, 62.
- Dimethyl- β -acetylpropylamine (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 598.
- 2:4-Dimethyl-3-acetylpyrrole, azo-dye from (FISCHER and BARTHOLOMÄUS), 1912, A., i, 323.
- $\alpha\gamma$ -Dimethylaconitic acid, formation of (ROGERSON and THORPE), 1906, T., 647; P., 87.
- 2:6-Dimethylacridine and its picrate (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEFER), 1910, A., i, 882.
- 2:7-Dimethylacridine and its hydride and salts (ULLMANN and WAITZ), 1903, A., i, 519.
- 2:7-Dimethylacridine, 6-amino-, and its acetyl derivative and hydrochloride (ULLMANN and MÜHLHAUSER), 1903, A., i, 520.
- 3:7-Dimethylacridine and 2:8-diamino- (HAASE), 1903, A., i, 366.
- 3:7-Dimethylacridine, 8-amino-, and its acetyl derivative (FOX and HEWITT), 1904, T., 531; P., 9.
- 2:8-dihydroxy-, and its diacyl derivatives (ULLMANN and FITZENKAM), 1906, A., i, 46.
- Di- β -methylacridine trimagnesium alkyl iodides (SENIER, AUSTIN, and CLARKE), 1905, T., 1472; P., 228.
- Dimethylacrylbenzene. See Phenyl isobutenyl ketone.
- Dimethylacrylic acid, decomposition of, by heating with ammonia (FICHTER, LABHARDT, and KIEFER), 1910, A., i, 89.
- $\beta\beta$ -Dimethylacrylic acid, preparation of (BARBIER and LÉSER), 1905, A., i, 628.
- $\beta\beta$ -Dimethylacrylic acid, α -amino-, benzoyl derivative and its anhydride (PERKIN and SIMONSEN), 1909, P., 164.
- α -bromo-, derivatives of (STAUDINGER and OTT), 1911, A., i, 640.
- α -cyano- (KNOEVENAGEL), 1906, A., i, 482.
- "Dimethyladipic acid" (NOYES and DOUGHTY), 1905, A., i, 321.
- $\alpha\alpha$ -Dimethyladipic acid and δ -cyano-, ethyl ester and anilic acid (BLANC), 1905, A., i, 680.
- synthesis of (BLANC), 1904, A., i, 369, 647.
- preparation of (BLANC), 1906, A., i, 523.
- ethyl ester (BLANC), 1908, A., i, 171.
- $\alpha\beta$ -Dimethyladipic acid, synthesis of (NOYES and COX), 1904, A., i, 10.
- $\alpha\beta$ -Dimethyladipic acid, β -hydroxy-, derivatives of (HARDING), 1912, T., 1590; P., 219.
- $\alpha\delta$ -Dimethyladipic acid, preparation of (BEST and THORPE), 1909, T., 707.
- $\alpha\delta$ -Dimethyladipic acid, $\alpha\delta$ -dihydroxy-, and *iso*- $\alpha\delta$ -dihydroxy-, derivatives of (FITTIG and LENTZ), 1907, A., i, 474.
- $\beta\beta$ -Dimethyladipic acid (CROSSLEY and RENOUF), 1905, T., 1496; P., 209.
- and its anhydride and anilide (BLANC), 1905, A., i, 682.
- synthesis of (BLANC), 1905, A., i, 15.

- $\beta\beta$ -Dimethyladipic acid**, preparation of (BLANC), 1908, A., i, 245.
- Dimethyladipic acids**, $\alpha\alpha$ - and $\beta\beta$ -, separation of (CROSSLEY and RENOUF), 1906, T., 1552; P., 252.
- d*- and *l*- $\alpha\delta$ - (NOYES and KYRIAKIDES), 1910, A., i, 709.
- N*- β -Dimethylisoadrenaline** methylene ether, and its hydrochloride (MANNICH and JACOBSON), 1910, A., i, 414.
- s*-Dimethylallene**, preparation and properties of (KUKURITSCHKIN), 1904, A., i, 213.
- action of hypochlorous acid on (SMIRNOFF), 1905, A., i, 172.
- as*-Dimethylallene**, polymerisation of (LEBEDEFF), 1911, A., i, 774; 1912, A., i, 173.
- $\alpha\alpha$ -Dimethylisocallitric acid** and β -nitro- (SIEMONSEN), 1904, A., i, 952.
- Dimethylallyl alcohol** and its acetate and phenylcarbamate (COURTOT), 1906, A., i, 789.
- $\alpha\alpha$ -Dimethyl- α -allylacetophenone** (HALLER and BAUER), 1909, A., i, 109.
- Dimethylallylamine** and its picrate (KNORR and ROTH), 1906, A., i, 458.
- Dimethylallylbenzene**. See Allylxylene.
- Dimethylallylcarbinol** and its phenylcarbamate (COURTOT), 1906, A., i, 926.
- $\gamma\gamma$ -Dimethylallylcarbinol**, its acetate and the acetate of its dibromide (VAN AERDE), 1909, A., i, 79.
- Dimethylisallylcarbinol** (GRY), 1908, A., i, 307.
- 2:6-Dimethyl-4-allyldihydropyridine-3:5-dicarboxylic acid**, ethyl ester (GRISHKEWITSCH-TROCHIMOWSKY), 1911, A., i, 320.
- $\beta\beta$ -Dimethyl- δ -allyl- Δ^5 -hepten- γ -one** (HALLER and BAUER), 1910, A., i, 220.
- 1:3-Dimethyl-5-allyl- Δ^3 -cyclohexen-5-ol** (MATSHUREVITSCH), 1911, A., i, 962.
- 2:6-Dimethyl-4-allylpyridine-3:5-dicarboxylic acid**, ethyl ester, platinumchloride (GRISHKEWITSCH-TROCHIMOWSKY), 1911, A., i, 320.
- 3:4-Dimethyl-1-allyluracil** (BÜCKENDORFF), 1912, A., i, 55.
- 1:4-Dimethyl-3-allyluracil** (BÜCKENDORFF), 1912, A., i, 55.
- Dimethylamine**, action of, on furfuraldehyde (LITTERSCHEID), 1905, A., i, 76.
- action of, on mesityl oxide (HOCHSTETTER and KOHN), 1904, A., i, 18.
- Dimethylamine**, production of hydrocyanic acid from (VOERKELIUS), 1909, A., i, 776.
- compound of, with cuproso-cupric cyanide (LITTERSCHEID), 1904, A., i, 301.
- platinum compounds of (JÖRGENSEN), 1906, A., i, 339; (JÖRGENSEN and SÖRENSEN), 1906, A., ii, 289.
- dihydrochloride (KAUFLEER and KUNZ), 1909, A., i, 137.
- hydroiodide (KAUFLEER and KUNZ), 1909, A., i, 556.
- platinichloride and periodide, and their use in the separation of, from trimethylamine (BERTHEAUME), 1910, A., i, 365.
- styphnate, preparation and crystallography of (JERUSALEM), 1909, T., 1285.
- Dimethylamine**, *N*-bromo- (WILLSTÄTTER and HOTTENROTH), 1904, A., i, 472.
- 5-Dimethylaminoacetonylthiolanthraquinone** (GATTERMANN), 1912, A., i, 1004.
- Dimethylaminoacetic acid**, santalyl ester and its hydrochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 137.
- γ -Dimethylaminoacetoacetic acid**, α -cyano-, and its hydrochloride and copper salt (BENARY), 1908, A., i, 601.
- p*-Dimethylaminoacetophenone** (STAUDINGER and KON), 1911, A., i, 879.
- and its phenylhydrazone (WEIL), 1908, A., i, 982.
- α -Dimethylaminoalizarin** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 499.
- p*-Dimethylaminoisobutylbenzenes** and *trinitro*- (SACHS and MICHAELIS), 1906, A., i, 575.
- Dimethylaminoalkylcarbinols** and their benzoyl derivatives, hydrochlorides of (RIEDEL), 1906, A., i, 632.
- Dimethylaminotert.-amyl alcohol**. See Methylenehydimeethylaminomethylcarbinol.
- p*-Dimethylaminoanilino-*m*-hydroxybenzyl alcohol** (GNEHM and WEBER), 1904, A., i, 533.
- β -Dimethylaminoanilino- $\alpha\beta$ -tetraphenylpropionic acid**, β -lactam of (STAUDINGER and JELAGIN), 1911, A., i, 215.
- 2-Dimethylaminoanilo-1:3-diketohydrindene** (RUHEMANN), 1911, T., 796.

- 5-Dimethylaminoanilo-3:4-diphenyl-cyclopentane-1:2-dione** and its platinichloride (RUHEMANN and NAUNTON), 1912, T., 49.
formation of gels with (HARDY), 1912, A., ii, 836.
- 5-Dimethylaminoanilo-3:4-diphenyl-cyclopentene-1:2-dione**, and bromo-, dibromo-, and dinitro-, and their platinichlorides (RUHEMANN and NAUNTON), 1911, P., 309; 1912, T., 46.
- p-Dimethylaminoanilo- α -hydrindone** (RUHEMANN), 1910, T., 1446.
- 2:5-p-Dimethylaminoanilo-1-phenyl-2:3-dimethylpyrazole** and its salts and derivatives (MICHAELIS, WURL, and DOEPMANN), 1911, A., i, 1041.
- s-4:8-Dimethyldiaminoanthraquinone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 1057.
- 1-Dimethylaminoanthraquinone** and its sulphonic acid and 4-chloro-, 4-hydroxy-, and 8-piperidino-derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 499.
- 1-Dimethylaminoanthraquinone**, 5:8-dibromo- (SÉVERIN), 1906, A., i, 508.
- 1:5-Dimethylaminoanthraquinone**, 4:8-dinitro-, and its nitrate (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 362.
- Dimethyldiaminoanthraquinone**, 1:5- or 1:8- (SCHMIDT), 1904, A., i, 257.
- Dimethylaminoanthraquinones**, halogen derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 325.
- 1:6- and 1:9-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 145.
- 4- and 5-Dimethylaminoanthraquinones**, 1-thiocyano-, and their derivatives (GATTERMANN), 1912, A., i, 1000.
- Dimethylaminoanthraquinone-1-sulphonic acid**, bromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 326.
- 1:4-Dimethylaminoanthraquinone-5-sulphonic acid**, potassium salt (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 243.
- 4- and 5-Dimethylaminoanthraquino-1-thiazoles** (GATTERMANN), 1912, A., i, 1005.
- Dimethylaminoantipyrine**. See Pyramidone.
- 4-Dimethylamino-3-antipyrine**. See 3-Pyramidone.
- Dimethylaminoisointipyrine**. See isopyramidone.
- Dimethylaminoazoantipyrine** (STOLZ), 1909, A., i, 70.
- p-Dimethylaminoazobenzene**, coloured salts of (HANTZSCH and HILSCHER), 1908, A., i, 485.
- p-Dimethylaminoazobenzene**, *p*-mono- and *tri*-bromo-, coloured salts of (HANTZSCH and HILSCHER), 1908, A., i, 485.
- 4-Dimethylaminoazobenzene-4'-arsinic acid** and its sodium salts (BARROW-CLIFF, PYMAN, and REMERY), 1908, T., 1898.
- p-Dimethylaminoazobenzene-o-carboxylic acid** as indicator (RUPP and LOOSE), 1909, A., ii, 90.
- p-Dimethylaminoazobenzene-p-carboxylic acid** and its hydrochloride (HANTZSCH and HILSCHER), 1908, A., i, 470.
- Dimethyl-o-aminobenzaldehyde** and its salts, phenylhydrazones, and oxime (BAMBERGER), 1904, A., i, 422.
and its salts, oxime, and azine, and 5-nitro-, and its salts, oxime and phenylhydrazone (COHN and BLAU), 1904, A., i, 674.
- Dimethyl-p-aminobenzaldehyde** and its oximes and additive compounds (SACHS and STEINERT), 1904, A., i, 506.
and 2-chloro- and 2-chloro-5-nitro-, and their phenylhydrazones (ULLMANN and FREY), 1904, A., i, 423.
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- Dimethyl-p-aminobenzaldehyde**, 3-nitro-, and its oxime (NOELTING and DEMANT), 1904, A., i, 424.
- p-Dimethylaminobenzaldehyde-p-bromophenylhydrazone** (WEIL), 1908, A., i, 983.
- p-Dimethylaminobenzaldehydecyano-hydrin** (SACHS and LEWIN), 1903, A., i, 37.

- Dimethylaminobenzeneazobenzenesulphonic acid**, nickel and cobalt salts (POZZI-ESCOLT, 1909, A., ii, 705).
- Dimethylaminobenzeneazo- α -naphthol** and its hydrochlorides, platinichloride, methiodide, acetyl and benzoyl derivatives, and ethyl ether and its dihydrochloride and platinichlorides (FOX and HEWITT), 1908, T., 341; P., 6.
- p*-**Dimethylaminobenzeneazophenol** and its absorption spectra, and its acetate, hydrochloride, and methiodide (HEWITT and THOMAS), 1909, T., 1295; P., 190.
- p*-**Dimethylaminobenzeneazosulphonic acid** and its salts (STOLLÉ), 1912, A., i, 921.
- 4-Dimethylamino-2'-benzeneazotoluene-5'-arsinic acid** and its sodium salts (BARROWCLIFF, PYMAN, and REMFRY), 1908, T., 1899.
- p*-**Dimethylaminobenzenediazonium salts** (STOLLÉ), 1912, A., i, 920.
- p*-**Dimethylaminobenzhydrol** ethyl ether (WILLSTÄTTER and GOLDMANN), 1906, A., i, 981.
- p*-**Dimethylaminobenzhydriyl-acetyl- and -benzoyl-acetones** (FOSSE), 1908, A., i, 86.
- p*-**Dimethylamino-*o*-benzhydriyltri-phenylcarbinol** (PÉRARD), 1906, A., i, 756.
- o*-**Dimethylaminobenzoic acid**, 3:5-di-nitro- (ULLMANN and ENGI), 1909, A., i, 473.
- p*-**Dimethylaminobenzoic acid** (JOHNSON), 1905, P., 156.
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piperidylethyl ester (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 924.
- p*-**Dimethylaminobenzoic acid**, 3-amino-, acetyl derivatives of, and methyl ester and its acetyl derivative and picrate, 3-chloro-, and 3-iodo- (REVERDIN), 1907, A., i, 925.
diethylaminoethyl ester of (EINHORN), 1908, A., i, 639.
- 3-nitro-** (REVERDIN), 1907, A., i, 620.
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- 3:5-di-nitro-** (ULLMANN and WOSNESS-ENSKY), 1909, A., i, 475.
- Dimethylaminobenzoic acids**, *o*- and *p*-, menthyl esters of (COHEN and DUDLEY), 1910, T., 1746.
m- and *p*-, methyl esters, methiodides of (WILLSTÄTTER and KAHN), 1904, A., i, 235.
- m*-**Dimethylamino-benzophenone** and its methiodide and -benzhydrol (v. BAEYER), 1907, A., i, 761.
hydrochloride (STAUDINGER), 1909, A., i, 907.
- 4'-Dimethylaminobenzophenone**, 5-chloro-2-amino-, and its acetyl derivative (ZINCKE and PRENTZELL), 1906, A., i, 110.
- 4:4'-Dimethyldiaminobenzophenone** and its salts, and benzoyl derivative, and dicyano-, and its oxime, and nitroso- (v. BRAUN and KAYSER), 1904, A., i, 687.
- 4:4'-Dimethyldiaminobenzophenone, 3:3'-di-nitro-** (CONSONNO), 1904, A., i, 677.
- p*-**Dimethylamino-benzophenoneoxime** and -benzhydriylamine and its hydrochloride (MERCK), 1906, A., i, 661.
- 4-Dimethylaminobenzophenone-3-sulphonic acid** and its salts and oxime (WILLSTÄTTER and GOLDMANN), 1906, A., i, 981.
- 5-Dimethylaminobenzothiazole** (SCHMIDT), 1906, A., i, 711.
- 2'-Dimethylaminobenzoylbenzoic acid**, 3:6-di-bromo-, and its esters and acetyl and nitroso-derivatives (SÉVERIN), 1906, A., i, 508.
- p*-**Dimethylamino-*o*-benzoylbenzoic acid**, second methyl ester of, and the action of magnesium phenyl bromide on it (PÉRARD), 1908, A., i, 422.
- p*-**Dimethylaminobenzoyl-2-*p*-dimethylaminobenzylbenzene** and its trinitro-derivative, phenylhydrazone, dioxime, and phthalazine (GUYOT and PIGNET), 1908, A., i, 569.
- o*-4-Dimethylaminobenzoyloxybenzoic acid**, ethyl ester (EINHORN and v. BAGH), 1910, A., i, 259.
- 8-Dimethylamino- α -benzoyloxyisobutyric acid**, methyl, ethyl, and amyl esters and their hydrochlorides (LES ÉTABLISSEMENTS POULENC FRÈRES), 1909, A., i, 229.
- 4-Dimethylaminobenzyl alcohol** and its derivatives (v. BRAUN and KRUBER), 1912, A., i, 970.
- Dimethylaminobenzylamine** (TSCHERNIAK), 1903, A., i, 490.
- p*-**Dimethylaminobenzyl-1-aminoanthraquinone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1911, A., i, 995.

- p*-Dimethylaminobenzyl-aniline and -anisidines, α -cyano- (SACHS and LEWIN), 1903, A., i, 38.
- 2'-Dimethylaminobenzylbenzoic acid, 3:6-dibromo- (SÉVERIN), 1906, A., i, 508.
- Dimethylaminobenzylidene chloride and hydrochloride of (STAUDINGER), 1909, A., i, 906.
- p*-Dimethylaminobenzylidene-acetone and -acetophenone. See *p*-Dimethylaminostyryl methyl and phenyl ketones.
- p*-Dimethylaminobenzylidene-acetyl- and -benzoyl-acetones (SACHS and STEINERT), 1904, A., i, 507.
- p*-Dimethylaminobenzylidene-aniline and -anisidines (SACHS and LEWIN), 1903, A., i, 38.
- Dimethylaminobenzylideneaniline, chloronitro- (ULLMANN and FREY), 1904, A., i, 424.
- Dimethylaminobenzylideneanthranilic acid (WOLF), 1910, A., i, 736.
- Dimethyl-*p*-aminobenzylideneanthraquinonyl-1- and -2-hydrazones (MÖHLAU, VIERTTEL, and REINER), 1912, A., i, 704.
- p*-Dimethylaminobenzylidenebarbituric acid (SACHS and LEWIN), 1903, A., i, 39.
- 5-*p*-Dimethylaminobenzylidene-3-*iso*-butylrhodanine (NÄGELE), 1912, A., i, 795.
- p*-Dimethylaminobenzylidenecamphor, preparation of (HALLER and BAUER), 1909, A., i, 595.
- 5-*p*-Dimethylaminobenzylidene-3- ψ -cumyl- and -3-*isohexyl*-rhodanic acids (KALUZA), 1910, A., i, 130.
- p*-Dimethylaminobenzylidene-dibenzyl ketone and -phenylacetone and their hydrochlorides and oximes (MAYERHOFER), 1907, A., i, 780.
- 3-*p*-Dimethylaminobenzylidene-2-ketothionaphthen (MARSHALK), 1912, A., i, 576.
- 4-*p*-Dimethylaminobenzylidenemethyl-6-methyl-2-pyrimidone, and its hydrochlorides (STARK and BÜGEMANN), 1910, A., i, 437.
- p*-Dimethylaminobenzylideneoxindole (WAHL and BAGARD), 1909, A., i, 735.
- p*-Dimethylaminobenzylidene-*p*-phenetidine (SACHS and LEWIN), 1903, A., i, 38.
- 5-*p*-Dimethylaminobenzylidenerhodanic acid (BARGELLINI), 1906, A., i, 536.
- 5-*p*-Dimethylaminobenzylidenerhodanic acid, and its 3-methyl, 3-ethyl, and 3-allyl derivatives (ANDREASCH and ZIPSER), 1905, A., i, 932.
- β -Dimethylaminobenzylidene- α -rhodaninpropionic acid (ANDREASCH), 1910, A., i, 695.
- p*-Dimethylaminobenzylidenesemicarbazide (F. and L. SACHS), 1905, A., i, 191, 274.
- p*-Dimethylaminobenzylidenetetrazoline (RUHEMANN and MERRIMAN), 1905, T., 1778.
- p*-Dimethylaminobenzylidene-*p*-toluidine (SACHS and LEWIN), 1903, A., i, 38.
- p*-Dimethylaminobenzylmethylaniline, α -cyano- (SACHS and LEWIN), 1903, A., i, 38.
- 5-Dimethylaminobenzyl-3-methylbenzoic acid, 2-hydroxy- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.
- p*-Dimethylaminobenzyl-*p*-phenetidine, α -cyano- (SACHS and LEWIN), 1903, A., i, 38.
- o*-Dimethylaminobenzylphenyltetramethyl-diaminodiphenylcarbinol and its salts, and its leuco-base (GUYOT and PIGNET), 1908, A., i, 570.
- p*-Dimethylaminobenzyl-*p*-toluidine, α -cyano- (SACHS and LEWIN), 1903, A., i, 38.
- 5-Dimethylamino-1- β -bromo- and - $\alpha\beta$ -dibromo-ethylthiolanthraquinone (GATTERMANN), 1912, A., i, 1004.
- p*-Dimethylaminobromostilbene (MAYERHOFER), 1907, A., i, 780.
- δ -Dimethylamino- β -butanol (FARBEN-FABRIKEN VORM. F. BAYER & CO.), 1911, A., i, 599.
- δ -Dimethylamino- β -butanone (FARBEN-FABRIKEN VORM. F. BAYER & CO.), 1911, A., i, 599.
- Dimethylamino-*tert*-butyl alcohol and its benzoate (FOURNEAU), 1904, A., i, 377.
- α -Dimethylaminobutyric acid and its additive salts (DUVILLIER), 1906, A., i, 236.
- Dimethylaminocamphor (FORSTER), 1905, T., 239 ; P., 23.
- methiodide and its benzoyl derivative (RABE, SCHNEIDER, and BRAASCH), 1908, A., i, 361.
- Dimethylamino-*aaa-trichloro*- β -hydroxyethoxyisobutyric acid, ethyl ester, and its hydrochloride, and propyl ester (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1909, A., i, 210.

- p*-Dimethylaminocinnamaldehyde, action of magnesium organic compounds on (SACHS and WEIGERT), 1907, A., i, 1048.
- p*-Dimethylaminocinnamic acid and its esters, and their additive salts, and bromo-derivatives (WEIL), 1908, A., i, 982.
- 2-*p'*-Dimethylamino-*p*-cinnamoylphenyl dihydroisindole (SCHOLTZ and WOLFRUM), 1910, A., i, 772.
- N*-Dimethyl-6-aminocoumarin (MORGAN and MICKLETHWAIT), 1904, T., 1287; P., 177.
- Dimethylaminodiamylmethane. See Dimethylaminoundecane.
- 1-*p*-Dimethylamino-2:5-dibenzhydryl-1:3:4-triazole and chloro- (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- β -Dimethylaminodiethyl sulphide and sulphoxide, methiodides of (SCHNEIDER, MÜLLER, and BECK), 1912, A., i, 192.
- Dimethylaminodiethylaminodimethylethylcarbinol (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 936.
- Dimethylaminodiethylaminodiphenylmalonic acid, methyl and ethyl esters (GUYOT and MICHEL), 1909, A., i, 158.
- Dimethylaminodiethylaminodiphenylmethane-*m*-sulphonic acid (AKTIENGESELLSCHAFT FÜR ANILIN-FABRIKATION), 1907, A., i, 969.
- 5-Dimethylamino-1:2-dihydrobenzothiazyl hydrogen sulphite (SCHMIDT), 1906, A., i, 711.
- 10-Dimethylamino-2:7-dimethoxy-9:10-di-*m*-anisylacenaphthene (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 964.
- 10-Dimethylamino-2:7-dimethoxy-9:10-diphenylacenaphthene (BESCHKE, RÖLLE, and STRUM), 1909, A., i, 962.
- 4'-Dimethylamino-2:5-dimethoxytriphenylmethane (KAUFFMANN and GROMBACH), 1906, A., i, 285.
- 2-Dimethylamino-9-*p*-dimethylaminophenylanthracene and -dihydroanthracene (GUYOT and PIGNET), 1908, A., i, 569.
- Dimethylaminodimethylisoamylcarbinol and the hydrochloride of its benzoyl derivative (RIEDEL), 1908, A., i, 956.
- 7-Dimethylamino- α -dimethylbutyl benzoate (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 925.
- 2'-Dimethylamino-2:5-dimethyldiphenylmethane, 3:6-dibromo-5'-amino-4-hydroxy-, and its acetyl derivatives and hydrobromide (AUWERS and WEHR), 1904, A., i, 998.
- 4'-Dimethylamino-2:5-dimethyldiphenylmethane, 6-bromo-4-hydroxy-, and 4-hydroxy- (AUWERS and STRECKER), 1904, A., i, 1000.
- 3:6-dibromo-4-hydroxy-, and its ethiodide (AUWERS and WEHR), 1904, A., i, 998.
- 3:6-di- and 3:6:3'-tri-bromo-4-hydroxy-, and their salts and acetyl derivatives (AUWERS and JACOB), 1904, A., i, 996.
- 4'-Dimethylamino-3:5-dimethyldiphenylmethane, 2:6-di- and 2:6:3'-tri-bromo-4-hydroxy-, and its salts, and their acetyl derivatives (AUWERS and HÄHNLE), 1904, A., i, 998.
- Dimethylaminodimethylethylcarbinol and the hydrochloride of its benzoyl derivative (RIEDEL), 1908, A., i, 956.
- salts of (FOURNEAU), 1910, A., i, 823.
- 4:4'-Dimethylamino-3:3'-dimethylhexaphenyl-*p*-xylene (ULLMANN and SCHLAEFFER), 1904, A., i, 570.
- Dimethylaminodimethylphenylpyrazolone, compounds of, with caffeine and aromatic acids (CHEMISCHE WERKE VORM. H. BYK), 1912, A., i, 516.
- p'*-Dimethylaminodiphenyl sulphide, *o*-nitro-, and its hydrochloride (ZINCKE and FARR), 1912, A., i, 764.
- 4'-Dimethylaminodiphenylamine, 3:5-dichloro-4-hydroxy- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 308.
- 3-Di-*p*-methylaminodiphenylamine and its triacetyl derivative (GNEHM and SCHRÖTER), 1906, A., i, 211.
- Dimethyl-*p*-diaminodiphenylamine, preparation of, and its salts and derivatives (GNEHM and WEBER), 1904, A., i, 532.
- Dimethyltriaminodiphenylamine (GNEHM and WEBER), 1904, A., i, 532.
- p*-Dimethylaminodiphenylamine-*m*-carboxylic acid, *p*-hydroxy- (CASSELLA & Co.), 1908, A., i, 860.
- Dimethylaminodiphenylanthracene (PÉRARD), 1906, A., i, 756.
- Dimethylaminodiphenylbenzylcarbinol (BUSIGNIES), 1909, A., i, 736.
- 4'-Dimethylamino-*as*-diphenylethane, 2:3:5-tribromo-4-hydroxy-, and its salts (AUWERS and STRECKER), 1904, A., i, 999.
- p*-Dimethylamino-*as*-diphenylethylene (BUSIGNIES), 1909, A., i, 736.
- and its carbinol (FECHT), 1907, A., i, 927.

- 4'-Dimethylaminodiphenylmethane**, 3:5-*di-* and 2:3:5-*tri-*bromo-4-hydroxy-, and its salts, and 4-hydroxy-, and its benzoyl derivative (AUWERS and STRECKER), 1904, A., i, 999.
- Dimethyldiaminodiphenylmethane** and its phenylcarbamide and phenylthiocarbamide derivatives and *dicyano-* and *nitroso-* (v. BRAUN and KAYSER), 1904, A., i, 687.
- Dimethyltetraaminodiphenylmethane** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 519.
- p*-Dimethylamino-*as*-diphenylpropylene** (BUSIGNIES), 1909, A., i, 736.
- Dimethylaminodiphenylsulphone-2-aldehyde**, 4-nitro- (ULLMANN and FREY), 1904, A., i, 424.
- 4'-Dimethylamino-9-diphenylxanthen** (ULLMANN and ENGI), 1904, A., i, 682.
- p*-Dimethylaminodistyryl ketone** (BORSCHKE), 1910, A., i, 683.
- Di-*p*-methylaminoditolylamine** and its tribenzoyl derivative (GNEHM and SCHRÖTER), 1906, A., i, 212.
- Dimethyldiaminodi-*p*-tolylmethane** and its nitroso-derivative (v. BRAUN), 1908, A., i, 685.
- Dimethylaminoethyl benzoate** and its hydrochloride (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1906, A., i, 952; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 167, 266.
- Di- β -methylaminoethyl disulphide** and its salts (GABRIEL and COLMAN), 1912, A., i, 530.
- Dimethylaminoethyl alcohol** and ether, melting point, specific gravity, and refractive index of (KNORR and MEYER), 1905, A., i, 748.
- Dimethylaminoethyl ether**, synthesis of, and its salts (KNORR), 1904, A., i, 854, 916.
- Dimethyl- α -aminoethylcarbinol** and its platinichloride (KRASSUSKY), 1908, A., i, 139.
- 4-Dimethylamino-1- α -ethylpropylbenzene** and its additive salts (F. and L. SACHS), 1905, A., i, 191, 274.
- o*-Dimethylaminoethylstilbene** and its hydrochloride, hydriodide, and methiodide (FREUND and BODE), 1909, A., i, 516.
- Dimethylaminofluoran**, chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1903, A., i, 510.
- 7-Dimethylamino- α -guaiacylpropanol** and its methiodide and benzoyl derivative (FOURNEAU), 1910, A., i, 247.
- Dimethyl- α -*di*aminohehexane**, derivatives of (v. BRAUN), 1910, A., i, 821.
- Dimethylaminocyclohexene**, bromo-derivatives, and their salts (JACKSON and CLARKE), 1905, A., i, 768.
- Dimethylamino- Δ^2 -cyclohexene** and its derivatives (WILLSTÄTTER and HATT), 1912, A., i, 544.
- 3:3'-Dimethylamino-4:4'-*di*hydroxy-arsenobenzene** and its dihydrochloride (BERTHEIM), 1912, A., i, 819.
- 2'-Dimethylamino-3'-hydroxy-benzoyl- and -benzyl-3:6-dichlorobenzoic acids** (SEVERIN), 1903, A., i, 262.
- β -4-Dimethylamino-2-hydroxybenzoyl-propionic acid** and amide (WEIN-SCHENK), 1904, A., i, 59.
- β -Dimethylamino- α -hydroxyisobutyric acid**, esters, and their acyl derivatives (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1908, A., i, 938; (FOURNEAU), 1909, A., i, 211.
- Dimethylamino-2-hydroxydichloro-anthraquinone** (SEVERIN), 1903, A., i, 262.
- 3-Dimethylamino-9:10-*di*hydroxy-9-*p*-dimethylaminophenyl-10-*mp*-dimethyl-, -10 *p*-ethyl-, -10 *p*-methoxy-, and -10 *p*-ethoxy-phenyldihydroanthracenes** (GUYOT and STAEHLING), 1906, A., i, 18.
- Dimethyl-*p*-amino-*m*-hydroxydiphenylamine** and its salts and *p*-amino-, and *p*-nitroso- (GNEHM and WEBER), 1904, A., i, 533.
- p*-Dimethylamino-*p*-hydroxydiphenylamine** and its derivatives (GNEHM and BOTS), 1904, A., i, 451.
- p*-Dimethylaminohydroxyaminobenzyl-dibenzyl ketone** (MAYERHOFER), 1907, A., i, 780.
- 3-Dimethylamino-4-hydroxyphenylar-sinic acid** (BERTHEIM), 1912, A., i, 819.
- Dimethylaminoketo-**. See Ketodimethyl-amino-.
- p*-Dimethylaminomalononitrile** (SACHS and LEWIN), 1903, A., i, 39.
- p*-Dimethylaminomandelic acid**, barium salt, and amide (SACHS and LEWIN), 1903, A., i, 38.
- p*-Dimethylaminomercaptoanilinome-thyl sulphurous acid**, sodium salt (SCHMIDT), 1906, A., i, 711.
- δ -Dimethylamino- β -methyl- $\Delta\beta$ -amylene** (KOHN), 1907, A., i, 338; (KOHN and MORGENSTERN), 1907, A., i, 684.
- δ -Dimethylamino- δ -methyl- $\Delta\alpha$ -amylene** (KOHN and SCHLEGEL), 1907, A., i, 683; (KOHN and MORGENSTERN), 1907, A., i, 684.

- 6-Dimethylamino-3-methylbenzyl chloride and its salts (V. BRAUN and KRUBER), 1912, A., i, 969.
- 4-Dimethylamino-3-methylbenzyl alcohol and its derivatives (V. BRAUN and KRUBER), 1912, A., i, 970.
- 6-Dimethylamino-3-methylbenzyl alcohol and its derivatives (V. BRAUN and KRUBER), 1912, A., i, 969.
- 6-Dimethylamino-3-methylbenzyl ether and its derivatives (V. BRAUN and KRUBER), 1912, A., i, 969.
- δ-Dimethylamino-γ-methylbutan-β-ol and its derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 598.
- Dimethylaminomethyldiethylcarbinol (SÜSSKIND), 1906, A., i, 133.
- 5-Dimethylamino-2-methyleneaminophenyl mercaptan and its ferrocyanide (SCHMIDT), 1906, A., i, 711.
- 5-Dimethylamino-2-methyleneaminophenylthiol formaldehydethiosulphate (SCHMIDT), 1906, A., i, 711.
- Dimethylaminomethylenecamphor (STAUDINGER and KON), 1911, A., i, 879.
- α-Dimethylaminomethylglucoside (IRVINE and HYND), 1912, T., 1142.
- 4-Dimethylamino-2-methylthioltoluene and its hydrochloride (ZINCKE and ROLLHAUSER), 1912, A., i, 550.
- 1:3-Dimethyl-8-aminomethylxanthine (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 746.
- γ-Dimethylaminonaphthoxypropanol and its methiodide (FOURNEAU), 1910, A., i, 247.
- 4-Dimethylamino-1-naphthyl methyl sulphide and its hydriodide (ZINCKE and SCHÜTZ), 1912, A., i, 258.
- p-Dimethylamino-m-nitrobenzamide (SACHS and STEINERT), 1904, A., i, 507.
- α-Dimethylamino-β-aci-dinitroethane (DUDEN, BOCK, and REID), 1905, A., i, 568.
- γ-Dimethylamino-α-p-nitrophenoxypropanol and its picrate and benzoyl derivative (FOURNEAU), 1910, A., i, 247.
- α-Dimethylamino-β-p-nitrophenylethane and its oxalate (BARGER), 1906, T., 2195.
- Dimethylaminonitrosophenylhydroxylamine, barium salt (VELARDI), 1904, A., i, 805.
- Dimethylaminocyclooctadienes, isomeric, and their methiodides (WILLSTÄTTER and VERAUGH), 1905, A., i, 515.
- Dimethylaminocyclooctane, and its derivatives (WILLSTÄTTER and WASER), 1910, A., i, 366.
- Dimethylaminocyclooctatriene and its salts (WILLSTÄTTER and WASER), 1912, A., i, 19.
- Dimethylaminoparaxanthine, diuretic action of, and its decomposition in the body (FORSCHBACH and WEBER), 1907, A., ii, 378.
- 8-Dimethylaminoparaxanthine and its sodium salt (BOEHRINGER & SÖHNE), 1905, A., i, 230.
- α-Dimethylaminopentane and its platinum chloride and methiodide (WILLSTÄTTER and WASER), 1910, A., i, 366.
- picrate (V. BRAUN), 1911, A., i, 611.
- 3-Dimethylaminophenanthraphenazonium salts (KEHRMANN and WINKELMANN), 1907, A., i, 346.
- 9-Dimethylaminophenanthrene methiodide (SCHMIDT and STROBEL), 1903, A., i, 692.
- 3-Dimethylaminophenol, 2:5-dinitro-4-acetylamino-, and its silver derivative (MELDOLA and HAY), 1909, T., 1048.
- p-Dimethylaminophenol and its methiodide, acetyl derivatives (AUWERS and WEHR), 1904, A., i, 998.
- perbromide of (WIELAND and WECKER), 1910, A., i, 244.
- 3-Dimethylaminophenonaphthoxazone, formation of, from New Methylene-blue GG, from New-blue B, and from Meldola's-blue, and its hydrochloride (THORPE), 1907, T., 333; P., 33.
- 1-Dimethylamino-5- and -8-phenoxyanthraquinones (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 519.
- Dimethylamino-β-phenoxy-α-methoxypropanol, and its methiodide (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1911, A., i, 291.
- γ-Dimethylamino-α-phenoxypropanol, and its derivatives (FOURNEAU), 1910, A., i, 247.
- Dimethylaminophenyl sulphide, hydroxy-, sodium sulphonate and thiodimethylanilino-derivative of (PRESCOTT and SMILES), 1911, T., 647.
- α-p-Dimethylaminophenylacetoacetic acid, α-hydroxy-, methyl ester (GUYOT and BADONNEL), 1909, A., i, 305.
- 4-Dimethylaminophenylacetyl-2:4-dimethoxybenzoylazomethine (SACHS and HEROLD), 1907, A., i, 629.

- 4'-Dimethylamino-9-phenylacridine and 2-mono- and 2:4-dinitro- (ULLMANN, BADER, and LABHARDT), 1908, A., i, 52.
- Dimethylaminophenylacridylmethylene-quinonodimethyliminium chloride (PORAI-KOSCHITZ, AUSCHKAP, and AMSLER), 1912, A., i, 223.
- Dimethylaminophenyl alkylaminonaphthyl ketones and their conversion into auramines (NOELTING), 1904, A., i, 621.
- Dimethylaminophenyl β -diaminodiphenylmethane and nitro-, and their dialkyl and diaryl derivatives (NOELTING), 1904, A., i, 622.
- Dimethyl-*p*-aminophenylamino-*m*-hydroxybenzyl alcohol (GNEHM and WEBER), 1904, A., i, 533.
- p*-Dimethylaminophenylarsinic acid (*dimethylatoxyl*) and its sodium salt (MICHAELIS), 1908, A., i, 590.
- Dimethyl-*m*- and -*p*-aminophenylauramine (GRANDMOUGIN and LANG), 1909, A., i, 974.
- 4-Dimethylaminophenylazomethine-5-acridine (PORAI-KOSCHITZ, AUSCHKAP, and AMSLER), 1911, A., i, 689.
- 10-*p*-Dimethylaminophenylazomethine-acridine (KAUFMANN), 1912, A., i, 516.
- 2-*p*-Dimethylaminophenylazomethine-quinoline ethiodide (KAUFMANN), 1912, A., i, 517.
- p*-Dimethylaminophenylbenzylcarbinol and its salts (F. and L. SACHS), 1905, A., i, 202.
- Dimethylaminophenyl- ψ -benzylthiocarbamide, cyano- (FROMM and WELLER), 1908, A., i, 703.
- α -*p*-Dimethylaminophenylbutan- α -ol and its methiodide (SACHS and WEIGERT), 1907, A., i, 1047.
- α -*p*-Dimethylaminophenyl- Δ^{α} -butylene and its additive salts (SACHS and WEIGERT), 1907, A., i, 1047.
- p*-Dimethylaminophenyldi-alkyl- and -aryl-methanes (SACHS and MICHAELIS), 1906, A., i, 575.
- 1:2-*p*-Dimethylaminophenyl-1:2-dihydroisobenzofuran (GUYOT and PIGNET), 1908, A., i, 569.
- Dimethylaminophenyldimethylcarbinol and its benzoyl derivative and their salts (RIEDEL), 1908, A., i, 957.
- p*-Dimethylaminophenyldi-2-methyl-1-ethylindylmethane, *o*-chloro- (FREUND and LEBACH), 1905, A., i, 665.
- 1-*p*-Dimethylaminophenyl-2:4-dimethyl-3-hydroxymethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 78.
- p*-Dimethylaminophenyldi-2-methyl-indyl- and -indolidene-methanes and their *o*-chloro-derivatives (FREUND and LEBACH), 1905, A., i, 664.
- ϵ -*p*-Dimethylaminophenyl- β -dimethylnonane, and its methiodide (SACHS and WEIGERT), 1907, A., i, 1048.
- γ -*p*-Dimethylaminophenyl- β -dimethylpentane and its methiodide and picrate (SACHS and WEIGERT), 1907, A., i, 1048.
- Dimethylaminophenyldimethylpyrazolone camphorates (MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 530.
- 4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone. See Pyramidone.
- 4-Dimethylamino-1-phenyl-2:5-dimethyl-3-pyrazolone. See 3-Pyramidone.
- 1-*p*-Dimethylaminophenyl-3:4-dimethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 136.
- Dimethyl-*p*-aminophenyldinaphthazanthene (FOSSE), 1904, A., i, 337.
- 1-*p*-Dimethylaminophenyl-1:2-diphenyl 1:2-dihydroisobenzofuran and 2-hydroxy-, and its methyl and ethyl ethers (PÉARD), 1906, A., i, 755.
- α -Dimethylamino- β -phenylethane (BARGER), 1909, T., 2195.
- 4'-Dimethylaminophenyl-4-ethoxyphenyl- μ -cyanoazomethine (SACHS and LEWIN), 1903, A., i, 38.
- p*-Dimethylaminophenylethylcarbinol and its salts (F. and L. SACHS), 1905, A., i, 202.
- p*-Dimethylaminophenylglycine and its nitrile (FREUND and WIRSING), 1907, A., i, 254.
- p*-Dimethylaminophenylglyoxyl chloride (STAUDINGER and STOCKMANN), 1909, A., i, 796.
- p*-Dimethylaminophenylhydrazinesulphonic acid and its dibenzoyl derivative (STOLLÉ), 1912, A., i, 921.
- p*-Dimethylaminophenyl-*p*-hydroxy-*m*-tolylamine (CASSELLA & Co.), 1903, A., i, 860.
- p*-Dimethylaminophenylimesatine (MÖHLAU and LITTER), 1906, A., i, 611.
- Dimethylaminophenyl-lactic acid and its derivatives (FOURNEAU), 1907, A., i, 622.
- 4-Dimethylaminophenyl-*o*-methoxybenzoylacetylazomethine (SACHS and HEROLD), 1907, A., i, 628.
- 4'-Dimethylaminophenyl-4-methoxyphenyl- μ -cyanoazomethine (SACHS and LEWIN), 1903, A., i, 38.
- α -*p*-Dimethylaminophenyl- γ -methylbutan- α -ol and its methiodide (SACHS and WEIGERT), 1907, A., i, 1047.

- a-p*-Dimethylaminophenyl- γ -methyl- $\Delta\alpha$ -butylene and its additive salts (SACHS and WEIGERT), 1907, A., i, 1047.
- p*-Dimethylaminophenylmethylcarbinol and its salts (F. and L. SACHS), 1905, A., i, 202.
- 1-*p*-Dimethylaminophenyl-2-methyl-3-hydroxymethyl-4-ethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 341.
- 1-*p*-Dimethylaminophenyl-2-methyl-3-hydroxymethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1910, A., i, 340.
- a-p*-Dimethylaminophenyl- δ -methylpentan- α -ol, - δ -methyl- $\Delta\alpha$ -pentene, - β -methylpropan- α -ol, and - β -methyl- $\Delta\alpha$ -propylene and their additive salts (SACHS and WEIGERT), 1907, A., i, 1048.
- 4-Dimethylamino-1-phenyl-5-methyl-3-pyrazolone and its methiodide (MICHAELIS and KOTELMANN), 1907, A., i, 155.
- p*-Dimethylaminophenyl methyl thioether and its hydrochloride (ZINCKE and JÖRG), 1909, A., i, 790.
- 3-*p*-Dimethylaminophenyl- β -naphthacquinoline- $\alpha\beta$ -naphthacinchonic acid, and dinitro- (SACHS and STEINERT), 1904, A., i, 507.
- p*-Dimethylaminophenyl- α -naphthylcarbinol and its salts (F. and L. SACHS), 1905, A., i, 202.
- \beta-p*-Dimethylaminophenyl- α -naphthylpropionic acid (FOSSE), 1906, A., i, 976.
and its salts (FOSSE), 1907, A., i, 136.
- a-p*-Dimethylaminophenyl- $\Delta\alpha\gamma$ -pentadiene and its picrate (SACHS and WEIGERT), 1907, A., i, 1048.
- 4'-Dimethylaminophenylphenyl- μ -cyanoazomethine (SACHS and LEWIN), 1903, A., i, 38.
- p*-Dimethylamino- β -phenylpropionic acid (WEIL), 1908, A., i, 982.
- γ -Dimethylamino- α -phenylpropyl alcohol and its acyl derivatives and salts (FOURNEAU), 1907, A., i, 763.
- γ -Dimethylamino- β -phenylpropyl alcohol and its additive salts and benzoyl derivative (FOURNEAU), 1905, A., i, 57.
- p*-Dimethylaminophenylpropylene (SACHS and STEINERT), 1904, A., i, 507.
and its platinichloride (F. and L. SACHS), 1905, A., i, 202.
- p*-Dimethylaminophenyl styryl ketone (benzylidene-*p*-dimethylaminocetophenone) (FECHT), 1907, A., i, 927.
- p*-Dimethylaminophenyltartronic acid, methyl and ethyl esters (GUYOT and MICHEL), 1909, A., i, 158.
- p*-Dimethylaminophenyl-thiocarbamide, -thiohydantoic acid, and - ψ -thiohydantoin (WHEELER and JAMIESON), 1903, A., i, 522.
- Dimethylaminophenyl-thiuret hydriodide and -dithiobiuret and its hydrochloride (FROMM and WELLER), 1908, A., i, 703.
- 4'-Dimethylaminophenyl-4-tolyl- μ -cyanoazomethine (SACHS and LEWIN), 1903, A., i, 38.
- Dimethyltetra-aminophenyl-*o*-tolylmethane (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 519.
- 1-*p*-Dimethylaminophenyl-2:3:4-trimethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 135.
- 1-*p*-Dimethylaminophenyl-3:4:4-trimethyl-5-pyrazolone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 1033.
- Dimethyl-*m*- and -*p*-aminophthalanil (GRANDMOUGIN and LANG), 1909, A., i, 972.
- $\alpha\beta$ -Dimethylaminopropionic acid, and hydrochloride of its ethyl ester, and hydrochloride, and nitrosoamines (TAFEL and FRANKLAND), 1909, A., i, 830.
- Dimethylaminoisopropyl benzoate (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1908, A., i, 266.
- o*- γ -Dimethylaminopropylaniline, and its salts (v. BRAUN), 1910, A., i, 820.
- p*-Dimethylaminoisopropylbenzene. See *N*-Dimethylcumidine.
- γ -Dimethylamino-*a*-isopropylideneisohexamide and its dibromide and methiodide (PAULY and HÜLTENSCHMIDT), 1904, A., i, 87.
- p*-Dimethylaminostilbene and its salts (F. and L. SACHS), 1905, A., i, 202.
- 5-*p*-Dimethylaminostyrylacridine and its hydrochlorides (PORAI-KOSCHITZ, SOLODOWINKOFF, and TROITZKI), 1907, A., i, 975.
- p*-Dimethylaminostyryl methyl ketone (*p*-dimethylaminobenzylideneacetone) (SACHS and LEWIN), 1903, A., i, 38.
and its oxime and phenylhydrazone (RUPE and SIEBEL), 1906, A., i, 859, 966.
- 2-*p*-Dimethylaminostyryl-6-methylquinoline (PORAI-KOSCHITZ, SOLODOWINKOFF, and TROITZKI), 1907, A., i, 974.

- 2-Dimethyl-*p*-aminostyryl- β -naphthathiazole** and its dihydrochloride (RUPE and SCHWARZ), 1905, A., i, 83.
- p*-Dimethylaminostyryl phenyl ketone** (*p*-dimethylaminobenzylideneacetophenone) (SACHS and LEWIN), 1903, A., i, 38.
- and its hydrochloride and phenylhydrazone (RUPE and PORAI-KOSCHITZ), 1906, A., i, 755.
- p*-Dimethylamino-2-styrylquinoline** (*p*-dimethylaminobenzylidenequinaldine) (NOELTING and WITTE), 1906, A., i, 886.
- Dimethylaminoterephthalic acid** and its dimethyl ester (WEGSCHEIDER, FALTIS, BLACK, and HUPPERT), 1912, A., i, 264.
- salts and esters of (WEGSCHEIDER and BLACK), 1912, A., i, 463.
- Dimethylaminotetrahydrobenzene.** See Dimethylaminocyclohexene.
- 4-Dimethylamino-1:2:2:4-tetramethyl-5-pyrrolidone** and its additive derivatives (KOHN), 1908, A., i, 829.
- p*-Dimethylaminotetraphenylethylene** (STAUDINGER and KON), 1911, A., i, 879.
- 8-Dimethylaminotheophylline** (BOEHRINGER & SÖHNE), 1905, A., i, 231.
- Dimethylaminothiazone**, tetrabromo- (GNEHM and KAUFLEER), 1904, A., i, 687, 935.
- p*-Dimethylaminothiobenzamide** (F. and L. SACHS), 1905, A., i, 191, 274.
- Dimethylaminothioxanthrone, hydroxy-**, dimethylaminophenylthiol derivative of, and its platinichloride (MARSDEN and SMILES), 1911, T., 1357.
- γ -Dimethylamino- α -thymoxypropanol** and its methiodide (FOURNEAU), 1910, A., i, 247.
- as*-(4)-Dimethyl-2:4-diaminotoluene.** See 2:4-Tolylene-4-dimethyldiamine.
- 4-Dimethylamino-3-toluic acid** and its salts (V. BRAUN and KRUBER), 1912, A., i, 969.
- Dimethylamino-*o*-toluo-*N*-methyl-*o*-toluidide** and its picrate (RASSOW and REUTER), 1912, A., i, 555.
- Di-*p*-methyl-diaminotoluquinone** and its tetra-acetate (FICHTER and GLASER), 1908, A., i, 661.
- 5-Dimethylaminotolylmethyl-3-methylbenzoic acid, 2-hydroxy-** (ANILIN-FARBEN- und EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.
- γ -Dimethylamino- α -*p*-tolylloxypropanol** and its benzoyl derivative (FOURNEAU), 1910, A., i, 247; (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), 1911, A., i, 291.
- Dimethylaminotrialkylcarbinyl esters**, salts of (RIEDEL), 1906, A., i, 843.
- Dimethylaminotrimethylcarbinol** and the hydrochloride of its benzoyl derivative (RIEDEL), 1908, A., i, 956.
- hydrochloride, salts of (FOURNEAU), 1910, A., i, 823.
- 4-Dimethylamino-2:6:6-trimethylcyclohexane-1-carboxylic acid, ethyl ester** (MERLING, WELDE, EICHWEDE, and SKITA), 1909, A., i, 482.
- o*-Dimethylaminotriphenylcarbinol** and its salts (V. BAEYER and VILLIGER), 1904, A., i, 899.
- m*-Dimethylaminotriphenylcarbinol** and its chloride, and their hydrochlorides, and methyl ether (V. BAEYER), 1907, A., i, 760.
- p*-Dimethylaminotriphenylcarbinol** and its picrate and oxalate (V. BAEYER and VILLIGER), 1904, A., i, 786.
- Dimethyl-diaminotriphenylcarbinol** and its zincchloride, nitrosoamine, phenylthiocarbamide, and dicyano-derivative (V. BRAUN), 1904, A., i, 345.
- p*-Dimethylaminotriphenylethylene** (STAUDINGER and KON), 1911, A., i, 879.
- p*-Dimethylaminotriphenylmethane** (F. and L. SACHS), 1905, A., i, 191, 274.
- Dimethyl-diaminotriphenylmethane** and its thiocarbamides, picrate, nitrosoamine, and dicyano-derivative (V. BRAUN), 1904, A., i, 344.
- Dimethylaminoundecane** (BOUVEAULT), 1905, A., i, 116.
- 5-Dimethylaminouracil** (WHEELER and JAMIESON), 1904, A., i, 942.
- δ -Dimethylamino- α -valeric acid, ethyl ester** and its aurichloride (WILLSTÄTTER and KAHN), 1904, A., i, 561.
- 5-Dimethylamino-1-vinylthiolanthraquinone** (GATTERMANN), 1912, A., i, 1004.
- Dimethyl-4:6-diamino-*m*-xylene.** See *m*-Xylene-4:6-dimethyldiamine.
- Dimethyl-diaminoxyloquinone** (FICHTER and WILLMANN), 1904, A., i, 678.
- Dimethylammonio-cadmium chloride** (LANG), 1903, T., 724; P., 125.
- Dimethylammonium iridichloride** (GUTBIER and LINDNER), 1909, A., ii, 1025.
- and iridibromide (GUTBIER and RIESS), 1910, A., i, 97.
- nitrite (RÁY and RAKSHIT), 1911, T., 1472; P., 72, 122.
- osmichloride (GUTBIER and MAISCH), 1911, A., i, 18.

Dimethylammonium platinibromide (GUTBIER and BAURIEDL), 1910, A., i, 12.

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Dimethylisoamylamine, preparation of (CLARKE), 1905, A., i, 428.

Dimethylamylammonium, *di-ε*-amino-, iodide dihydriodide and benzoyl derivative and its iodide (v. BRAUN), 1910, A., i, 821.

Dimethylisoamylcarbinol, amino- (RIEDEL), 1908, A., i, 251.

***αβ*-Dimethylamylene**, *αβ*-oxide (RIEDEL), 1908, A., i, 956.

***βδ*-Dimethyl-Δ^α-amylene**, *γ*-chloro- (UMNOVA), 1911, A., i, 249.

1:3-Dimethyl-6-amyl-3-hexyl-Δ^ε-cyclohexene-2-carboxylic acid, 5-imino-2-cyano- (GARDNER and HAWORTH), 1909, T., 1964.

***αβ*-Dimethylanhydroacetonebenzil**, reduction products of (JAPP and MAITLAND), 1904, T., 1473; P., 204.

***ββ*-Dimethylanhydroacetonebenzil**, oxime of (GRAY), 1909, T., 2147.

Dimethylanhydroacetonebenzils, *αβ*- and *ββ*-, oxidation products of (JAPP and MICHIE), 1903, T., 279; P., 21.

Dimethylanhydrovalolactone (LOSANITSCH), 1911, A., i, 804.

Dimethylaniline, absorption spectrum of (PURVIS), 1910, T., 1551.

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Dimethylaniline, bromo-derivatives and their perbromides and salts (FRIES), 1906, A., i, 647.

*di*hydrobromide, and *di*hydriodide (KAUFLE and KUNZ), 1909, A., i, 556.

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p-bromo-, dibromide of (HANTZSCH and GRAF), 1905, A., i, 575.

3-chloro-4-amino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 779.

ω-cyano- (BUCHERER), 1904, A., i, 729. and its *p*-nitroso-derivative (WARUNIS and SACHS), 1904, A., i, 669.

o-, *m*-, and *p*-iodo-, preparation of (v. BAERYER), 1905, A., i, 767.

o-nitro-, salts of (WEISSENBARGER), 1912, A., i, 690.

m-nitro-, and *p*-nitroso-, dihydrochlorides (KAUFLE and KUNZ), 1909, A., i, 137.

2:4-dinitro-, preparation of (ULLMANN), 1908, A., i, 626.

2:6-dinitro- (BORSCHKE and RANTSCHKE), 1911, A., i, 330.

2:4-di-, and tetra-nitro- (SCHMIDT), 1905, A., i, 951.

p-nitroso-, constitution of (VELARDI), 1904, A., i, 804.

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- Dimethylaniline, *p*-nitroso-**, compounds of, with acids and salts (PICKARD and KENYON), 1907, T., 902.
- additive compounds of, with phenols** (TORREY and GIBSON), 1906, A., i, 242.
- sulphate, compound of hydrogen chloride and** (v. KORCZYŃSKI), 1910, A., i, 551.
- dithio-** (FICHTER and TAMM), 1910, A., i, 836.
- Dimethylaniline-*p*-azo-*o* nitrobenzaldehyde** and its phenylhydrazone (SACHS and KANTOROWICZ), 1906, A., i, 908.
- Dimethylanilinebenzoylguaiaicolphthalein** (FISCHER and RÖMER), 1909, A., i, 800.
- Dimethylanilinecatecholphtalein** (FISCHER and RÖMER), 1909, A., i, 800.
- Dimethylaniline-*o*-cresolphthalein** (FISCHER and RÖMER), 1909, A., i, 800.
- Dimethylanilineguaiacolphthalein** (FISCHER and RÖMER), 1909, A., i, 800.
- Dimethylaniline- β -naphthisatin** (WICHELHAUS), 1903, A., i, 632.
- Dimethylanilinephtalein** and similar basic phtaleins (FISCHER and RÖMER), 1909, A., i, 799.
- p*-Dimethylanilinesulphonanilide** (FICHTER and TAMM), 1910, A., i, 836.
- Dimethylanilinesulphonic acids**, preparation of (JUNGHANN), 1903, A., i, 474.
- Dimethylanilinesulphurtrioxide** and its derivatives (WILCOX), 1905, A., i, 45.
- p*-Dimethylanilinoaminoacetamide** (LUMIÈRE and PERRIN), 1903, A., i, 832.
- 2-*p*-Dimethylanilino-7-hydroxynaphthalene**, diacetyl derivative (GNEHM and WEBER), 1904, A., i, 533.
- Dimethylanilinoisatin**, acetyl derivative (DANAÏLA), 1909, A., i, 971.
- Dimethylanilinoisatins**, oxidation of (DANAÏLA), 1909, A., i, 971.
- 2-*p*-Dimethylanilino-naphthalene**, 7-hydroxy-, and its diacetyl derivative (GNEHM and WEBER), 1904, A., i, 533.
- Dimethyl-*p*-anisidine**, oxidation of, and its chloride, bromide, *perbromide* and picrate (WIELAND and WECKER), 1910, A., i, 244.
- Dimethyl-*p*-anisidine**, 2:6-dinitro- (MELDOLA), 1910, P., 232; (REVERDIN and DE LUC), 1911, A., i, 965.
- 2:6-Dimethyl-1:4-anisidine**. See 5-Methoxy-*m*-2-xylidine.
- N*-Dimethyl-*S*-*p*-anisoyldithiourethane** (v. BRAUN), 1904, A., i, 90.
- 2:7-Dimethylanthracene** (LAVAUX), 1905, A., i, 43, 125, 698.
- Dimethylanthracenes**, constitutional formula of some (LAVAUX), 1907, A., i, 25.
- separation of the three**, obtained in the action of methylene chloride and aluminium chloride on toluene (LAVAUX), 1905, A., i, 125.
- 1:6- and 2:7-**, simultaneous production of (LAVAUX), 1908, A., i, 150, 256.
- Dimethyl-2:6-anthrachrysone**, ω -di-hydroxy-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 1057.
- Dimethylanthranilic acid** and its methyl ester, and their additive derivatives (WILLSTÄTTER and KAHN), 1904, A., i, 235.
- methyl ester**, action of nitrous acid on (HOUBEN), 1911, A., i, 293.
- Dimethylanthranilic acid**, *di*- ω -cyano- (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 319.
- 1:2-Dimethylanthraquinone**, 5:8-di-chloro-, and 5:8-dichlorodinitro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 1314.
- 1:3-Dimethylanthraquinone**, 4-amino-, 2:4-diamino-, 4-iodo-, 4-nitro-, and 2:4-dinitro- (SCHOLL and POTTSCHWAUSCHEG), 1910, A., i, 272.
- 5:8-dichloro-**, and 5:8-dichloronitro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 1317.
- 4-hydroxy-** and 4:6(7)-*di*hydroxy- (BENTLEY, GARDNER, and WEIZMANN), 1907, T., 1637.
- 1:4-Dimethylanthraquinone**, 5:8-di-chloro-, and 5:8-dichloronitro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 1318.
- 2:4-Dimethylanthraquinone**, 1-amino- (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 885.
- 2:6-Dimethylanthraquinone**, 1:5-di-amino-, 1:5-di-iodo-, and 1:5-di-nitro- (SEER), 1911, A., i, 386.
- 1:5-**, 3:5-, and 3:7-*di*hydroxy-, and the monomethyl ether and acetyl derivatives of the 3:5-compound (JOWETT and POTTER), 1903, T., 1331; P., 220.
- Dimethylarsine**, preparation and reactions of (DEHN and WILCOX), 1906, A., i, 150.
- Dimethylarsinic acid**, action of alkalis on, and its iodo-derivatives (AUGER), 1908, A., i, 516.

- Dimethylaticonic acid**, oxidation of (FITTIG and SCHWARTZLIN), 1904, A., i, 553.
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- Dimethylatoxyl.** See *p*-Dimethylaminophenylarsinic acid.
- Dimethylatropic acid** and its esters (BLAISE and COURTOT), 1906, A., i, 794.
- 2:5-Dimethylatropic acid** and its dibromide (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- Dimethylatropyl chloride** and *p*-toluidide (BLAISE and HERMAN), 1911, A., i, 881.
- Dimethylatropylethane** and its *p*-nitrophenylhydrazine (BLAISE and HERMAN), 1911, A., i, 881.
- 8:9-Dimethylazipurine**, 2-amino-6-hydroxy-, and its picrate and silver salt (SACHS, MEYERHEIM, and BRUNETTI), 1909, A., i, 66.
- 2:3'-Dimethylazobenzene**, 4'-iodo-, derivatives of, with multivalent iodine (WILGERODT and LEWINO), 1904, A., i, 635.
- 2:3'-Dimethylazobenzene-4-** and **-4'-diazosulphonic acids** and their salts (TRÖGER and PUTTKAMMER), 1907, A., i, 264.
- 2:3'-Dimethylazobenzene-4-hydrazine-sulphonic acid**, formation of, and its condensation with aldehydes and ketones (TRÖGER and PUTTKAMMER), 1909, A., i, 68.
- 2:3'-Dimethylazobenzene-4-** and **-4'-hydrazinesulphonic acids** and their salts (TRÖGER and PUTTKAMMER), 1907, A., i, 264.
- 2:3'-Dimethylazobenzene-4-hydrazones**, additive products of, with acids (TRÖGER and PUTTKAMMER), 1909, A., i, 69.
- 5:5-Dimethylbarbituric acid** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 1084.
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- 2:5-Dimethylbenzaldazine**, reduction of (HARDING and COHEN), 1904, A., i, 36.
- 2:4-Dimethylbenzaldehyde** and its oxime and phenylhydrazine and 5-nitro- (GATTERMANN), 1906, A., i, 591.
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- 2:4-Dimethylbenzaldehyde**, 3:5-dichloro-, and its semicarbazone (AUWERS), 1911, A., i, 384.
- 2:5-Dimethylbenzaldehyde** and its oximes (FRANCESCONI and MUNDICI), 1903, A., i, 426.
 and 6-amino-, 4-bromo-, 6-nitro-, and their derivatives (GATTERMANN), 1912, A., i, 984.
- 2:5-Dimethylbenzaldehyde**, 3-nitro- 4-hydroxy-, and its azine, oxime, and condensation product with aniline (GATTERMANN), 1908, A., i, 29.
- 3:4-Dimethylbenzaldehyde** and its azine, oxime, phenylhydrazine, and condensation with benzidine (GATTERMANN), 1906, A., i, 591.
 and its semicarbazone (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 3:4-Dimethylbenzaldehyde**, 6-hydroxy-, and its azine and phenylhydrazine, synthesis of (GATTERMANN), 1908, A., i, 29.
- 3:5-Dimethylbenzaldehyde** and its semicarbazone (LAW and PERKIN), 1905, A., ii, 40.
- 3:5-Dimethylbenzaldehyde**, 2:4:6-trihydroxy-, and its oxime, and pentaacetyl derivative (HERZIG, WENZEL, and KERÉNYI), 1904, A., i, 252.
- Dimethylbenzaldehydes**, 2:3-, 2:5-, 2:6-, and 3:5-, 4-hydroxy-, and their derivatives, synthesis of (GATTERMANN), 1908, A., i, 28.
 2:4-, and 3:5-, electrolytic reduction of (LAW), 1907, T., 751; P., 73.
- 2:4-Dimethylbenzamide**, 6-chloro- (AUWERS), 1911, A., i, 385.
- Dimethylbenzanthrone**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1908, A., i, 993.
- 1:5-Dimethylisobenzdithiazole** (*diethenyl 2:5-disulphohydro-p-diaminobenzene*) (GREEN and PERKIN), 1903, T., 1206; P., 206.
- Dimethylbenzenes.** See Xylenes.
- Dimethylbenzenylamidine**, benzoyl derivative, and its platinichloride (LAUDER), 1903, T., 323; P., 16.
- s-Dimethylbenzidine** and its salts and di-*p*-toluenesulphonyl derivative (WILLSTÄTTER and KALB), 1904, A., i, 1051.
- Di-p-methylbenzilic acid** and its anhydride (GATTERMANN), 1906, A., i, 590.
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- 1:3-Dimethylbenziminazole**, 6-chloro- and its iodide (FISCHER), 1904, A., i, 349.
- 2:5-Dimethylbenziminazole**, nitro-, constitution and derivatives of (MARON and SALZBERG), 1911, A., i, 1032.

- 4:6-Dimethyl-benziminazole and -benziminazolol**, nitro- (FISCHER and HESS), 1904, A., i, 196.
- 4:7-Dimethylbenziminazole**, 6-nitro- (FRIES and NOLL), 1912, A., i, 660.
- 1:3-Dimethylbenziminazol-2-ol**, 5-bromo-, and its iodide (FISCHER and MOUSON), 1905, A., i, 246.
- 6-chloro-, and its platinichloride (FISCHER), 1904, A., i, 349.
- 6-chloronitro- (FISCHER and LIMMER), 1906, A., i, 896.
- 6-nitro- (FISCHER and HESS), 1904, A., i, 195.
- Dimethylbenzocycloheptadienone** (THIELE and WEITZ), 1910, A., i, 854.
- Dimethylbenzocycloheptanol** (THIELE and WEITZ), 1910, A., i, 855.
- 2:4-Dimethylbenzoic acid** (α -m-xylic acid) (RUPE and LOTZ), 1907, A., i, 13.
- 2:4-Dimethylbenzoic acid**, 3-amino-, 3-iodo-, and 3-nitro-5-amino- and their esters and derivatives (WHEELER and HOFFMAN), 1911, A., i, 446.
- 6-amino-, and 6-nitro- (KALLE & Co.), 1912, A., i, 126.
- 3:5-dichloro-, and its methyl ester (AUWERS), 1911, A., i, 384.
- 2:6-Dimethylbenzoic acid**, 4-hydroxy- (RABE and SPENCE), 1906, A., i, 89.
- Di-p-methylbenzoin** (GATTERMANN), 1906, A., i, 590.
- 2:4-Dimethylbenzonitrile**, 6-chloro- (AUWERS), 1911, A., i, 385.
- 2:5-Dimethylbenzonitrile** (FRANCESCONI and MUNDICI), 1903, A., i, 426; (SCHMID and DECKER), 1906, A., i, 306.
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- Dimethylbenzonitriles** (SCHOLL and KAČER), 1903, A., i, 255.
- 3:4'-Dimethylbenzophenone**, crystalline form of (SCHORIGIN), 1909, A., i, 165.
- 3:5-Dimethylbenzophenone**, 4-hydroxy- (AUWERS and v. MARKOVITS), 1908, A., i, 630.
- Dimethylbenzophenones**, 2:4'- and 3:4'-, and their oximes (SCHARWIN and SCHORIGIN), 1903, A., i, 635.
- Dimethylbenzopyranol** (DECKER and v. FELLEBERG), 1909, A., i, 117.
- 2:3-Dimethylbenzopyronium ferrichloride** (DECKER and v. FELLEBERG), 1909, A., i, 117.
- 4:7-Dimethyl-1:2:3-benzotriazole**, 5-amino-, 6-chloro-5-hydroxy-, 5-hydroxy-, 5-nitro-, and their derivatives (FRIES and NOLL), 1912, A., i, 660.
- 1:3-Dimethylbenzoxazole**, 4:6-dibromo-5-hydroxy- (HENRICH, MEYER, and DORSCHKY), 1904, A., i, 494.
- 1:4-Dimethylbenzoyl-acetic and -propionic acids**, ethyl esters (MARGUERY), 1905, A., i, 528.
- 2':3'-Dimethyl-2-benzoylbenzoic acid**, 3:6-dichloro-, and its sodium salt (HARROP, NORRIS, and WEIZMANN), 1909, T., 1314.
- 2':4'-Dimethyl-2-benzoylbenzoic acid**, 3:6-dichloro-, and 3:6-dichloro-5'-bromo-, and its sodium salt (HARROP, NORRIS, and WEIZMANN), 1909, T., 1316.
- 2':5'-Dimethyl-2-benzoylbenzoic acid**, 3:6-dichloro- (HARROP, NORRIS, and WEIZMANN), 1909, T., 1318.
- 3':5'-Dimethyl-2-benzoylbenzoic acid**, 2'-hydroxy- (BENTLEY, GARDNER, and WEIZMANN), 1907, T., 1637.
- 4(5):2'-di-hydroxy- (BENTLEY, GARDNER, and WEIZMANN), 1907, T., 1639.
- 1-p-Dimethylbenzoyl-2-methylcoumarone**, 4-amino-, acetyl derivative (KUNKELL and KESSELER), 1903, A., i, 509.
- N-Dimethyl-S-benzoyldithiourethane** (v. BRAUN), 1904, A., i, 90.
- 2:4-Dimethylbenzoyl-p-toluidide** (RUPE and LOTZ), 1907, A., i, 13.
- 4:6-Dimethyl-1:2:3:7:9-benzopentazole** (BÜLOW), 1910, A., i, 81.
- 5:6-Dimethyl-1:2:4:9-benzotetrazole**, 7-hydroxy- (4-hydroxy-5:6-dimethyl-2:3:7:0-diazpyridazine) (BÜLOW and WEBER), 1909, A., i, 615.
- 5:7-Dimethyl-1:2:4:9-benzotetrazole** (4:6-dimethyl-2:3:7:0-diazpyridazine), and its nitrate (BÜLOW and WEBER), 1909, A., i, 614.
- 2:6-Dimethyl-1:3:7:9-benzotetrazole**, 4-hydroxy-, and its salts (BÜLOW and HAAS), 1910, A., i, 203.
- 4:6-Dimethyl-1:3:7:9-benzotetrazole** (BÜLOW and HAAS), 1910, A., i, 80.
- 2:4-Dimethylbenzyl chloride**, and its derivatives (CURTIUS and MAYER), 1912, A., i, 308.
- 2:5-Dimethylbenzyl alcohol** and its acetate (FRANCESCONI and MUNDICI), 1903, A., i, 427.
- 2:5-Dimethylbenzyl alcohol**, 3:6-dibromo-4-hydroxy-, piperidine-carbon disulphide compound of (AUWERS), 1907, A., i, 919.
- 2:6-Dimethylbenzyl alcohol**. See Hemimellithyl alcohol.
- 3:5-Dimethylbenzyl alcohol**, 4-hydroxy- (BAMBERGER), 1903, A., i, 624.

- β -2:4-Dimethylbenzylaminocrotonic acid, ethyl ester** (CURTIUS and MAYER), 1912, A., i, 308.
- 2:4-Dimethylbenzylazoisimide** (CURTIUS and MAYER), 1912, A., i, 308.
- 2:5-Dimethylbenzyl-2:5-dimethylbenzylidenehydrazine** and its acetyl and benzoyl derivatives (HARDING and RICE), 1903, A., i, 286.
- 2:4-Dimethylbenzylhydrazine** and its salts, and α -nitroso- (CURTIUS and MAYER), 1912, A., i, 307.
- α -2:4-Dimethylbenzylhydrazonopropionic acid** (CURTIUS and MAYER), 1912, A., i, 308.
- 2:4-Dimethylbenzylidene chloride, 3:5-dichloro-** (AUWERS), 1911, A., i, 384.
- Dimethylbenzylidenacetone.** See Dimethylstyryl methyl ketone.
- Di-*p*-methylbenzylidenepicolide** (SCHOLTZ), 1912, A., i, 386.
- 2:4-Dimethylbenzylsemicarbazide** (CURTIUS and MAYER), 1912, A., i, 308.
- Dimethyl-1:2'-biscoumaranones, 4:5'- and 5:4'-** (FRIES and FINCK), 1909, A., i, 45.
- Dimethyl-*m*-biscyclohexenone** (KNOEVENAGEL), 1903, A., i, 638.
- Dimethylbis-oxadiazole and -thiodiazole** and their silver nitrate compounds (STOLLÉ and KIND), 1905, A., i, 96.
- N*-Dimethylbistrimethylenedi-imine dimethochloride** and its additive salts (KNORR and ROTH), 1906, A., i, 458.
- Dimethylborneol** and its phenylurethane (HALLER and BAUER), 1909, A., i, 594.
- Dimethylbrazilein** (ENGELS, PERKIN, and ROBINSON), 1908, T., 1132.
- 3:6-Dimethyldibromofluoran** (LAMBRECHT), 1909, A., i, 949.
- Dimethyldibromomaleide** (DIELS and REINBECK), 1910, A., i, 360.
- 1:4-Dimethyl-5-bromomethyldihydro-uracil, 4-bromo-5-hydroxy-** (BREMER), 1911, A., i, 161.
- 1:4-Dimethyl-5-*d*-bromomethyldihydro-uracil, 4-bromo-5-hydroxy-** (BREMER), 1911, A., i, 161.
- 1:4-Dimethyl-5-bromomethylenedihydro-uracil, 4-bromo-** (BREMER), 1911, A., i, 161.
- 1:3-Dimethyl-4- $\alpha\beta$ -*d*-bromopropylbenzene** (KUNCKELL and DETTMAR), 1912, A., i, 432.
- Dimethyl-brown**, a new indicator (POZZI-ESCOT), 1910, A., ii, 153.
- Dimethylbrucine acetate and iodide** (MOSSLER), 1912, A., i, 297.
- Dimethylbulbocapnimethine** and its salts (GADAMER and KUNTZE), 1911, A., i, 1013.
- $\beta\gamma$ -Dimethyl- $\Delta\alpha\gamma$ -butadiene** and its dibromide (COURTOT), 1906, A., i, 926.
- preparation of (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 829; (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 741.
- compound of sulphurous acid with (BADISCHE ANILIN- & SODA-FABRIK), 1911, A., i, 938.
- "Dimethylbutadiene-caoutchouc,"** "normal" and "sodium" and their derivatives (HARRIES and NERESHEIMER), 1911, A., i, 800.
- $\alpha\gamma$ -Dimethyl- $\Delta\alpha\beta$ -butadienylbenzene** and its tetrabromide (KLAGES), 1904, A., i, 567.
- $\alpha\alpha$ -Dimethylbutaldehyde**, derivatives of (RICHARD), 1911, A., i, 7.
- $\beta\beta$ -Dimethylbutaldehyde** (DELACRE), 1906, A., i, 477.
- $\beta\gamma$ -Dimethylbutane**, nitration of, and its amine (KONOWALOFF), 1908, A., i, 241.
- $\beta\gamma$ -Dimethylbutane, $\beta\gamma$ -diamino-**, and its additive salts and $\beta\gamma$ -dinitro- (BEWAD and PIRINSKY), 1906, A., i, 393.
- β -bromo- γ -nitroso-(tetramethylethylene nitrosobromide)** (SCHMIDT and LEIPRAND), 1904, A., i, 279.
- 1:3-Dimethylcyclobutane, 2:4-dicyano-** (v. MEYER and HENNING), 1908, A., i, 911.
- $\beta\beta$ -Dimethylbutane- $\alpha\gamma$ -diol** (FRANKE and KOHN), 1907, A., ii, 171.
- $\beta\beta$ -Dimethylbutane- $\alpha\delta$ -diol** (BOUVEAULT and BLANC), 1903, A., i, 730.
- Dimethylcyclobutanedione** (STAUDINGER, KLEVER, and MAYER), 1911, A., i, 308.
- $\alpha\alpha$ -Dimethylbutane- $\alpha\beta\delta$ -tricarboxylic acid** and its esters, and β -cyano-derivative of the esters, and inner anhydride (PERKIN and THORPE), 1903, P., 61; 1904, T., 128.
- $\alpha\alpha$ -Dimethylbutane- $\alpha\beta\delta$ -tricarboxylic acid, β -hydroxy-, ethyl ester** (HAWORTH and KING), 1912, T., 1979.
- $\alpha\delta$ -Dimethylbutane- $\alpha\alpha\delta$ -tricarboxylic acid**, synthesis of (NOYES and COX), 1904, A., i, 10.
- $\alpha\gamma$ -Dimethylbutane- $\alpha\beta\delta$ -tricarboxylic acid**, preparation of, and its silver salt and anhydro-acid (HENSTOCK and SPRANKLING), 1907, T., 354; P., 32.
- $\beta\beta$ -Dimethylbutane- $\alpha\gamma\delta$ -tricarboxylic acid**, ethyl ester, action of sodium and methyl iodide on (PERKIN and THORPE), 1906, T., 778.

- γ -Dimethylbutan- β -ol, β -cyano-, and its acetyl derivative (HENRY), 1906, A., i, 619.
- $\alpha\beta$ -Dimethyl- $\Delta\beta$ -butenoic acid, γ -cyano-, and its copper salt (GUARESCHI), 1907, A., i, 1003.
- Dimethylbutenol and its esters (COURTOT), 1906, A., i, 231.
- 1:3-Dimethyl- Δ^2 -cyclobuten-4-ol-2-one (SCHROETER and STASSEN), 1907, A., i, 533.
- 1:3-Dimethyl- Δ^2 -cyclobuten-4-ol-2-one-1-carboxylic acid and its ethyl ester and sodium salt (SCHROETER and STASSEN), 1907, A., i, 533.
- $\alpha\delta$ -Dimethyl- $\Delta\beta$ -butenylbenzene (RIIBER), 1903, A., i, 471.
- 1:3-Dimethyl-4- α -butenylbenzene (KUNCKELL), 1903, A., i, 617.
- $\alpha\gamma$ -Dimethyl- $\Delta\alpha$ - and - $\Delta\beta$ -butenylbenzenes (KLAGES), 1904, A., i, 568.
- Dimethylbutenylcarbinol, synthesis of, and its phenylurethane (PERKIN and PICKLES), 1905, T., 657; P., 131.
- Dimethylisobutenylcarbinol and its phenylcarbamate (COURTOT), 1906, A., i, 926.
- Dimethylisobutenylcyclo-hexanol and its dibromide and acetate, -hexanone, -hexene, -hexenone and its oxime, phenylhydrazones, semicarbazone, and tetrabromide, and -hexylamine and its sulphate and phenylthiocarbamide (KNOEVENAGEL and SCHWARTZ), 1906, A., i, 963.
- $\alpha\alpha$ -Dimethylbutyl acetate (HENRY), 1907, A., i, 674.
- $\alpha\gamma$ -Dimethylbutylbenzene and its metallic sulphonates, and α -hydroxy- (KLAGES), 1904, A., i, 568.
- Dimethylbutylcarbinol and its chloride (MUSSET), 1907, A., i, 374.
- Dimethylisobutylcarbinyl iodide (CHONIN), 1905, A., i, 729.
- 4:8-Dimethyl-6-*tert.*-butylcoumarin (CLAYTON), 1911, P., 246.
- $\gamma\gamma$ -Dimethyl- $\Delta\alpha$ -butylene (DELACRE), 1906, A., i, 477, 922.
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- $\gamma\gamma$ -Dimethyl- $\Delta\alpha$ -butylene, bromo-, and its iodohydrin and glycol and its diacetyl derivative (CLAESSENS), 1909, A., i, 127.
- $\beta\gamma$ -Dimethyl- $\Delta\beta$ -butylene (*tetramethylethylene*) (DELACRE), 1906, A., i, 477, 922.
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- $\beta\gamma$ -Dimethyl- $\Delta\beta$ -butylene (*tetramethylethylene*), action of nitrogen trioxide on (DEMJANOFF and SIDORENKO), 1909, A., i, 754.
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- $\beta\gamma$ -Dimethyl- $\Delta\alpha$ - and - $\Delta\beta$ -butylenes (HENRY), 1907, A., i, 374.
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- Dimethyl-*tert.*-butylethylene glycol (PRIESCHAEFF), 1910, A., i, 86.
- $\beta\epsilon$ -Dimethyl- γ -isobutylhexan- β -ol (FREYLONG), 1910, A., i, 359.
- 1:3-Dimethyl-5-*tert.*-butylcyclohexan-2-ol (DARZENS and ROST), 1911, A., i, 290.
- 1:3-Dimethyl-5-*tert.*-butylcyclohexan-2-one (DARZENS and ROST), 1911, A., i, 290.
- $\beta\epsilon$ -Dimethyl- γ -isobutyl- $\Delta\beta$ -hexene (FREYLONG), 1910, A., i, 359.
- 2:5-Dimethyl-1-butylpyrrole-3-carboxylic acid, ethyl ester, synthesis of (KORSCHUN), 1904, A., i, 264.
- 3:6-Dimethyl-4-isobutyltetrahydro-1:3-oxazine and its additive salts (KOHN and GIACONI), 1907, A., i, 680.
- 1:2-Dimethyl-4-isobutyltrimethylenimine and its additive salts (KOHN and GIACONI), 1907, A., i, 681.
- 1:3-Dimethyl-8-isobutylxanthine (TRAUBE and NITHACK), 1906, A., i, 215.
- $\alpha\alpha$ -Dimethyl-*n*-butyramide (HALLER and BAUER), 1909, A., i, 131.
- $\alpha\alpha$ -Dimethylbutyric acid, γ -bromo-, preparation of (BLANC), 1908, A., i, 245.
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- $\beta\gamma$ -*di*bromo-, action of alkali carbonates on (COURTOT), 1906, A., i, 788.
- $\beta\gamma$ -*di*bromo-, β -hydroxy-, and its derivatives, and β -iodo- (COURTOT), 1906, A., i, 230.
- β -hydroxy- (WOGGINZ), 1903, A., i, 604.
- β -iodo- γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 537.
- $\alpha\beta$ -Dimethylbutyric acid, α -hydroxy-, ethyl ester (DARZENS), 1911, A., i, 259.

- $\alpha\beta$ -Dimethylbutyric acid**, α -hydroxy-, 1-phenyl-2:3-dimethyl-5-pyrazolone ester (RIEDEL), 1910, A., i, 434.
- $\beta\beta$ -Dimethylbutyric acid** (DELACRE), 1906, A., i, 477.
- $\beta\beta$ -Dimethylbutyric acid**, α -amino-, ethyl ester (RICHARD), 1911, A., i, 7.
- $\alpha\gamma$ -dicyano-** (KNOEVENAGEL), 1906, A., i, 482.
- α -hydroxy-, esters and derivatives of** (RICHARD), 1911, A., i, 8.
- $\alpha\alpha$ -Dimethylbutyrolactone** (BLAISE and COURTOT), 1906, A., i, 793.
- hydrazine compound of (BLANC), 1905, A., i, 680.
- $\alpha\alpha$ -Dimethylbutyrolactone**, β -bromo- and β -hydroxy- (COURTOT), 1906, A., i, 788; (BLAISE and COURTOT), 1906, A., i, 927.
- β -bromo-, reaction of, with quinoline (BLAISE and COURTOT), 1906, A., i, 927.
- $\beta\beta$ -Dimethylbutyrolactone** (BLANC), 1905, A., i, 631.
- Dimethylbutyrolactones**, $\alpha\gamma$ - and $\beta\gamma$ -hydrazine compounds of (BLAISE and LUTTRINGER), 1905, A., i, 330.
- 1:3-Dimethylcaffolide** (BILTZ and KREBS), 1910, A., i, 521.
- and its silver salt (BILTZ), 1910, A., i, 522.
- 1:7-Dimethylcaffolide**. See *apo*Caffeine.
- 1:2-Dimethylcamphanediol** (FORSTER), 1905, T., 241.
- Dimethylcamphoformolaminecarboxylic acid**, dimethylamine salt (TINGLE and HOFFMANN), 1905, A., i, 800.
- Dimethylcampholenol** and its acetyl derivative, **Dimethylcampholandiene**, and **Dimethylcampholandiol** (BÉHAL), 1904, A., i, 514.
- Dimethylcampholide** and its isomeride (KOMPPA), 1908, A., i, 352.
- Dimethyl-camphor** and **-campholic acid** and its amide (HALLER and BAUER), 1909, A., i, 594.
- Dimethylcaoutchouc**, dry distillation of (RICHARD), 1911, A., i, 733.
- as*-Dimethylcarbamide** (DIELS and GOLLMANN), 1911, A., i, 956.
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- s*-Dimethylcarbamide**, action of diphenylhydroxyacetic acid on (ANGELI), 1908, A., i, 462.
- Dimethylcarbamideketoxime**-. See *Acet*-carbamidoxime.
- 1:3-Dimethylcarbazole** and its picrate (DELÉTRA and ULLMANN), 1904, A., i, 271.
- 2:6-Dimethylcarbazole** and its picrate (BORSCHKE, WITTE, and BOTHE), 1908, A., i, 367.
- Dimethylcarbindigotin** (FINDEKLEE), 1906, A., i, 43.
- 3:4-Dimethylcarbonatobenzoic acid** and its chloride and hydroxy-derivative (FISCHER), 1908, A., i, 892.
- Dimethylcarbonatobenzoic acids** 2:4-, and 2:5-, and their chlorides (FISCHER), 1909, A., i, 162.
- 4-Dimethylcarbonatobenzoxyloxybenzoic acid**, 3-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- Dimethylcarbonatodigenticisic acid** (FISCHER and FREUDENBERG), 1911, A., i, 875.
- Dimethylcarbonatodi- β -resorcylic acid** (FISCHER and FREUDENBERG), 1911, A., i, 875.
- 3:5-Dimethylcarbonato-4-methoxybenzoic acid**, methyl ester (FISCHER and PFEFFER), 1912, A., i, 559.
- Dimethylcarbonatoprotocatechuyglycine**, ethyl ester (KAMETAKA), 1909, A., i, 388.
- p*-Dimethylcarbonatoprotocatechuyloxybenzoic acid** (KAMETAKA), 1909, A., i, 388.
- Dimethylcetylamine** and its salts (v. BRAUN), 1911, A., i, 612.
- 2:4'-Dimethylchalkone**, 2'-hydroxy- (v. KOSTANECKI and v. SZLAGIER), 1905, A., i, 78.
- Dimethyl-*m*-chloroaminoazobenzene-*p*-sulphonic acid** and its barium salt (GOLDSCHMIDT and KELLER), 1903, A., i, 135.
- s*- and *as*-Dimethyldichlorocarbamide** (CHATTAWAY and WÜNSCH), 1909, T., 131.
- Dimethylchloroethylamine** and its salts (KNORR), 1904, A., i, 938.
- 1:2-Dimethyl-4- $\beta\beta$ -dichloroethylbenzene** (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 1:3-Dimethyl-4- $\beta\beta$ -dichloroethylbenzene** (AUWERS and KÖCKRITZ), 1907, A., i, 401.
- 1:3-Dimethyl-4- $\beta\beta$ -dichloroethylbenzene**, 5-chloro- (AUWERS), 1911, A., i, 385.
- 2:6-Dimethyl-4-chloromethyldihydropyridine-3:5-dicarboxylic acid**, ethyl ester (BENARY), 1911, A., i, 320.
- 1:2-Dimethyl-1-dichloromethyl-4-ethylcyclohexadien-4-ol** (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 1:3-Dimethyl-1-dichloromethyl-4-ethylcyclohexadien-4-ol** (AUWERS and KÖCKRITZ), 1907, A., i, 401.

- 1:2-Dimethyl-1-dichloromethyl-4-ethylidenecyclohexadiene (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 1:3-Dimethyl-1-dichloromethyl-4-ethylidenecyclohexadiene (AUWERS and KÖCKRITZ), 1907, A., i, 401.
- 1:4-Dimethyl-1-dichloromethyl- $\Delta^{2:5}$ -cyclohexadien-4-ol, 3-chloro-, and 3:5-dichloro- (AUWERS), 1911, A., i, 383, 384.
- 1:4-Dimethyl-4-dichloromethyl- $\Delta^{2:5}$ -cyclohexadien-1-ol (AUWERS and KEIL), 1903, A., i, 620. modifications of (AUWERS and HESSEN-LAND), 1907, A., i, 400.
- 1:4-Dimethyl-1-trichloromethyl- $\Delta^{2:5}$ -cyclohexadien-4-ol, and its bromo-derivatives (ZINCKE and SCHWABE), 1908, A., i, 337.
- 1:3-Dimethyl-1-dichloromethyl- $\Delta^{2:5}$ -cyclohexadien-4-one, 5-chloro- (AUWERS), 1911, A., i, 384.
- 1:3-Dimethyl-1-dichloromethylcyclohexen-4-one and its semicarbazone (AUWERS and KEIL), 1903, A., i, 100.
- 1:3-Dimethyl-1-dichloromethyl- Δ^2 -cyclohexen-4-one, 5:6-dichloro- (AUWERS), 1911, A., i, 384.
- 2:3-Dimethyl-3-dichloromethylindolenine and its oxime, picrate, and methiodide (PLANCHER and CARRASCO), 1905, A., i, 298.
- 1:3-Dimethyl-1-dichloromethyl-4-methylene- $\Delta^{2:5}$ -cyclohexadiene (AUWERS and KÖCKRITZ), 1907, A., i, 401.
- 1:3-Dimethyl-1-dichloromethyl-4-methylene- $\Delta^{2:5}$ -cyclohexadiene, 5-chloro- (AUWERS), 1911, A., i, 385.
- 1:3-Dimethyl-3-dichloromethyl-2-methyleneindoline (PLANCHER and CARRASCO), 1905, A., i, 666.
- 2:6-Dimethyl-4-chloromethylpyridine-3:5-dicarboxylic acid, ethyl ester (BENARY), 1911, A., i, 320.
- 2:5-Dimethyl-(?)-dichloromethylpyrrolenine, and its picrate (PLANCHER and PONTI), 1910, A., i, 133.
- Dimethyltetrachlorophthalide (BAUER), 1909, A., i, 585.
- 1:2-Dimethyl-4- $\beta\beta$ -dichloroisopropylbenzene (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- 1:3-Dimethyl-4-dichloroisopropylbenzene (AUWERS and KÖCKRITZ), 1907, A., i, 401.
- β -Dimethylcholine chloride and platinumchloride (MENGE), 1912, A., i, 74.
- 2:2-Dimethyl-1:2-chromen (HOUBEN), 1904, A., i, 334.
- Dimethylchrysazin. See 1:8-Dimethoxyanthraquinone.
- Dimethylcinchonine, constitution of, and its phenylhydrazone and tetrabromo- and its salts (COMANDUCCI and D'ONGHIA), 1910, A., i, 276.
- Dimethylcinchotennine and dibromo- (COMANDUCCI and D'ONGHIA), 1910, A., i, 276.
- p- β -Dimethylcinnamic acid and its methyl ester (SCHROETER), 1907, A., i, 531.
- 2:5-Dimethylcinnamic acid (GATTERMANN), 1912, A., i, 984.
- 2:5-Dimethylcinnamic acid, 4-hydroxy- (GATTERMANN), 1908, A., i, 29.
- Dimethylcinnamic acids, 2:4- and 3:4- (GATTERMANN), 1906, A., i, 591.
- 3:5-Dimethylcitrazinic acid, formation of (ROGERSON and THORPE), 1906, T., 648; P., 87.
- 1:1-Dimethylcitronellol (AUSTERWEIL and COCHIN), 1910, A., i, 572.
- Dimethyl-cærdithien, -cærdithienol, and -cærdithonium ferriehloride (DECKER, v. FELLEBERG, and FERRARIO), 1907, A., i, 1067.
- 4:14-Dimethyl-cæroxen-10-ol and its acetate, and -cæroxonol and its ethers (DECKER, v. FELLEBERG, and FERRARIO), 1907, A., i, 1066.
- 3:13-Dimethylcæroxonium sulphates and carbinol base (DECKER and FERRARIO), 1906, A., i, 688.
- Dimethylcorytuberimethine and its salts (GADAMER), 1912, A., i, 47.
- Dimethylcorytuberine and its salts (GADAMER), 1912, A., i, 47.
- 4:6-Dimethylcoumaran (STOERMER and GÖHL), 1903, A., i, 848.
- 1:4-Dimethylcoumaranone (AUWERS), 1912, A., i, 1010.
- 1:4-Dimethylcoumaranone-1-carboxylic acid, ethyl ester (AUWERS), 1912, A., i, 1010.
- 1:4-Dimethylcoumarone, 2-hydroxy- (AUWERS), 1912, A., i, 486.
- β : β -Dimethyl-o-coumaric acid (FRIES and KLOSTERMANN), 1908, A., i, 822.
- 2:3-Dimethylcoumarilic acid, 5-hydroxy-, ethyl ester (v. KOSTANECKI and TAMBOR), 1909, A., i, 319.
- 2:5-Dimethylcoumarilic acid and its ethyl ester (FRIES and FICKEWIRTH), 1908, A., i, 825.
- 3:4-Dimethylcoumarin (PETERS and SIMONIS), 1908, A., i, 340.
- 3:4-Dimethylcoumarin, 6-hydroxy- (BORSCHE), 1907, A., i, 622.
- 4:6-Dimethylcoumarin, azo-derivatives of (HEWITT and MITCHELL), 1906, T., 13.

- 4:7-Dimethylcoumarin** (FRIES and KLOSTERMANN), 1906, A., i, 276.
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- 4:7-Dimethylcoumarin**, 6-amino- (CLAYTON), 1910, T., 1352.
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- 5:6-Dimethylcoumarin**, 8-nitro- (CLAYTON), 1910, T., 1405.
- 6:7-Dimethylcoumarin**, 5-amino-, and 5:8-diamino- (CLAYTON), 1910, T., 1353.
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- Dimethylcoumarins**, 6:7-, 6:8-, and 5:8-, formation of (CLAYTON), 1908, T., 2018.
- Dimethylcreatinine aurichloride** (KUNZE), 1911, A., i, 21.
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- $\alpha\beta$ -Dimethylcrotonic acid**, γ -cyano-, ethyl ester (BLAND and THORPE), 1912, T., 888.
- $\alpha\alpha$ -Dimethylisocrotonic acid** and its derivatives (COURTOT), 1906, A., i, 231.
- N-Dimethylcumidine** (*p*-isopropyl-dimethylaniline) and its salts (F. and L. SACHS), 1905, A., i, 190, 274; (SACHS and WEIGERT), 1907, A., i, 1046.
- Dimethyl- α -cyano-ethyl- and -propylamines** (HENRY), 1904, A., i, 854.
- 3:5-Dimethyleytosine** (JOHNSON and CLAPP), 1908, A., i, 836.
- Dimethyldecenylamine** and its salts (v. BRAUN), 1912, A., i, 165.
- Dimethyldeacylacetophenone** (HALLER and BAUER), 1909, A., i, 655.
- Dimethyldehydrodihydroeugenol** (COUSIN and HÉRISSEY), 1908, A., i, 783.
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- Dimethyldehydrodivanillin**, oxidation of (HÉRISSEY and DOBY), 1909, A., i, 788.
- Dimethyldehydroindigotin** (KALB), 1910, A., i, 340.
- Dimethyldiacetonalkamine**. See Methyl- β -dimethylaminoisobutylcarbinol.
- Dimethyldiacetoneamine** (TRAUBE), 1909, A., i, 773.
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- Dimethyldiacridylum salts** (DECKER and DUNANT), 1909, A., i, 433.
- $\alpha\beta$ -Dimethyl- $\gamma\gamma$ -diallylbutyric acid**, γ -hydroxy-, lactone of (REFORMATSKY), 1909, A., i, 4.
- s-Dimethylisooamylethylenediamine** (CLARKE), 1911, T., 1934.
- Di-m-methyldianilinodibenzyl**, *di-o*-hydroxy-, and its tetra-acetyl derivative (ANSELMINO), 1908, A., i, 259.
- Dimethyldianthranelide** (SCHROETER and EISELE), 1909, A., i, 579.
- 2:2'-Dimethyl-1:1'-dianthraquinonyl** (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 540, 943; (SCHOLLI, HOLDERMANN, KUNZ, and MANSFELD), 1907, A., i, 540.
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- 2:2'-Dimethyl-1:1'-dianthraquinonyl**, ω -tetrabromo-, ω -tetrachloro-, and $\omega\omega\omega\omega$ -4:4'-, and -6:6'-hexachloro- (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 362.
d-nitro-, and diamino- (SCHOLL and SEER), 1910, A., i, 271.
- 4:4'-Dimethyl-1:1'-dianthraquinonyl** (ULLMANN and MINAJEFF), 1912, A., i, 366.
- Dimethyl-2:3:7:0-diazapyridazine**. See Dimethyl-1:2:4:9-benzotetrazole.
- 2:2'-Dimethyl-4:4-dibenzeneazooxybenzene** (BORSCHKE and KÜHL), 1906, A., i, 321.
- p-Dimethyldibenzenzylazoselenime**. See 3:5-Di-*p*-tolyl-1:2:4-selenodiazole.
- Dimethyldibenzyl**. See s-Ditylolethane.
- 2:5-Dimethyldibenzylamine** and its salts, preparation of (HARDING and COHEN), 1904, A., i, 36.
- 5:5'-Dimethyldibenzylidene-*p*-phenylenediamine**, 2:2'-*di*hydroxy- (SENIER and SHEPHEARD), 1909, T., 1953.
- Dimethyldisobutylethane**. See Dodecane.
- 5:5'-Dimethyl-1:2'-dicoumarone**, 2-hydroxy-, acetate (FRIES and PFAFFENDORFF), 1910, A., i, 186.
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- Dimethyl-*NN'*-diethyl-*pp'*-diaminodiphenylmethane** (FRÖHLICH), 1911, A., i, 493.
- 1:3-Dimethyl-5:5-diethylbarbituric acid** and 4-imino-, and its additive salts (CONRAD and ZART), 1905, A., i, 753.
- NN'*-Dimethyl-*NN'*-diethylbenzidine** and its derivatives (FRÖHLICH), 1911, A., i, 493.

- Dimethyldiethyldicarbinal.** See $\gamma\delta$ -Dimethylhexane- $\gamma\delta$ -diol.
- Dimethyldiethyldiglycollic acid** and its lead salt (DUPONT), 1912, A., i, 483.
- $\beta\beta$ -Dimethyl- $\delta\delta$ -diethylhexan- γ -ol** and its phenylurethane (HALLER and BAUER), 1910, A., i, 220.
- $\beta\beta$ -Dimethyl- $\delta\delta$ -diethylhexan- γ -one** (HALLER and BAUER), 1910, A., i, 220.
- Dimethyldiethylpiperazonium salts** (STRÖMHOLM), 1903, A., i, 291.
- Dimethyldiethylpyrone** and its hydrochloride and platinichloride (BAIN), 1906, T., 1232; P., 196.
- 3:4-Dimethyl-2:5-diethylpyrrole** and its acetate and potassium salt (PILOTY), 1910, A., i, 277.
- 2:4-Dimethyl-3:5-diethylpyrrole** (FISCHER and BARTHOLOMÄUS), 1912, A., i, 384.
- 2:3-Dimethyl-4:5-diethylpyrrole**, picrate of (FISCHER and BARTHOLOMÄUS), 1912, A., i, 298.
- Dimethyldiethylpyrroles** (COLACICCHI and BERTONI), 1912, A., i, 1016.
- Dimethyldiethylsilicane** (BYGDEN), 1911, A., i, 846.
- 2:5-Dimethyl-2:5-diethyltetrahydrofuran**, 3-hydroxy-, and its acetate (DUPONT), 1912, A., i, 290.
- Dimethyldicyclohexene** (WALLACH and PAULY), 1911, A., i, 474.
- Dimethyldicyclohexylhexanone** and its derivatives (WALLACH and OST), 1912, A., i, 568.
- 2:5-Dimethyl-5:10-dihydroacridine** (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.
- 5:10-Dimethyldihydroacridine**, 3:7-dibromo-5-cyano- (KAUFMANN, WIDMER, and ALBERTINI), 1911, A., i, 750.
- 5-cyano-, and its picrate (KAUFMANN, ALBERTINI, and WIDMER), 1911, A., i, 751.
- 9:10-Dimethyldihydroacridine** (FREUND and BODE), 1909, A., i, 515.
- 5:10-Dimethyldihydroacridine-5-carboxylic acid** (KAUFMANN, ALBERTINI, and WIDMER), 1911, A., i, 751.
- 9:10-Dimethyldihydroanthracene**, 9:10-dihydroxy-, and its 9-methyl and -ethyl and dimethyl ethers (GUYOT and STAEHLING), 1906, A., i, 17.
- 2:5-Dimethyldihydroatropic acid** (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- Dimethyldihydrobenzenes.** See Dimethylcyclohexadienes.
- 1:1-Dimethyl-1:2-dihydroisobenzofuran.** See Dimethylphthalan.
- 2:7-Dimethyl-2:3-dihydro-1:4-benzoxazine** and 6-chloro-, and the pyridine dyes (KÖNIG and BECKER), 1912, A., i, 497.
- 2:4-Dimethyldihydrocinnamic acid.** See β -m-Xylolpropionic acid.
- Dimethyldihydrodiquinolyl** (EMMERT), 1909, A., i, 603.
- 2:5-Dimethyl-2:3-dihydrofuran-4-carboxylic acid**, chloro-, ethyl ester (HALLER and MARCH), 1903, A., i, 319, 714.
- $\alpha\alpha$ -Dimethyl- $\alpha\beta$ -dihydrogeranic acid.** See $\alpha\alpha\beta\beta$ -Tetramethyl- Δ^8 -octenoic acid.
- 2:5- and 2:6-Dimethyldihydroindole** and their derivatives (KÖNIG and BECKER), 1912, A., i, 496.
- 2:7-Dimethyl-5:10-dihydro-1:3:6:8-naphthatetrazine**, 4:9-dihydroxy- (BOGERT and DOX), 1905, A., i, 949.
- 2:2-Dimethyldihydroperimidine** (SACHS), 1909, A., i, 433.
- 9:10-Dimethyldihydrophenanthrene**, 9:10-dihydroxy-, and its oxide and chloride (ZINCKE and TROPP), 1908, A., i, 786.
- Dimethyldihydropyrazine** and its salts and oxalate (GABRIEL and COLMAN), 1903, A., i, 13.
- 2:5-Dimethyl- $\Delta^{2:5}$ -dihydropyridazine-1-carbonamide-3-carboxylic acid**, ethyl ester (BORSCHKE and SPANNAGEL), 1904, A., i, 779.
- 3:6-Dimethyldihydropyridazine-4:5-dicarboxylic acid**, cyclohydrazide and its hydrochloride and tetrabenzoyl derivative (BÜLOW), 1904, A., i, 272.
- 3:6-Dimethyl-4:5-dihydropyridazine-4:5-dicarboxylic acid**, esters (PAAL and UBBER), 1903, A., i, 290.
- 2:6-Dimethyl-3:5-dihydropyridine** (v. MEYER and KLEINSTÜCK), 1908, A., i, 910.
- 3:5-Dimethyldihydropyridine-2:6-dicarboxylic acid**, ethyl ester, behaviour of, at high temperatures and in presence of spongy palladium (KNOEVENAGEL and FUCHS), 1903, A., i, 852.
- 4:6-Dimethyldihydro-2-pyrimidone** (*acetylacetonecarbamide*) (MAJIMA and KOBAYASHI), 1908, A., i, 224; (DE HAAN), 1908, A., i, 577.
- constitution and derivatives of (STARK), 1909, A., i, 259, 260; (STARK and BÖGEMANN), 1910, A., i, 487.
- 4:6-Dimethyldihydro-2-pyrimidone**, 5-bromo-, and dibromo-, and their salts (STARK and HÖRRMANN), 1911, A., i, 574.

- 4:6-Dimethyldihydro-2-pyrimidone**, 5:5:6-tribromo- (STARK), 1911, A., i, 574.
- 3:5-Dimethyldihydro-6-pyrimidone**, 2-thio- (JOHNSON and CLAPP), 1908, A., i, 835.
- 2:3-Dimethyl-4-dihydroquinazolone** ethiodide and methiodide (BOGERT and GEIGER), 1912, A., i, 511.
- 6-amino-** (BOGERT and GEIGER), 1912, A., i, 396.
- 1:2-Dimethyldihydroquinoline** (FREUND and SPEYER), 1905, A., i, 157.
- platinichloride (FREUND and RICHARD), 1909, A., i, 417.
- 1:6- and 1:8-Dimethyldihydroquinoline**, 4-cyano- (KAUFMANN and ALBERTINI), 1909, A., i, 958.
- 2:6-Dimethyldihydroquinoline** and its salts and tetrabromo- (HELLER and SCHMEJA), 1911, A., i, 748.
- 2:7-Dimethyldihydroquinoline** (HELLER and SCHMEJA), 1911, A., i, 748.
- 2:8-Dimethyldihydroquinoline** and tribromo-, and tetrabromo- (HELLER and SCHMEJA), 1911, A., i, 748.
- 1:2-Dimethyl-1:2-dihydroisoquinoline** and its platinichloride (FREUND and BODE), 1909, A., i, 515.
- Dimethyldihydroresorcinol** and its oximes, phenylhydrazone, and amine derivatives and their hydrochlorides (GITTEL), 1906, A., i, 169.
- condensation of, with ammonia, aniline, and *p*-toluidine (HAAS), 1906, T., 187; P., 17.
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- ethyl ether, preparation and reduction of (CROSSLEY and RENOUF), 1908, T., 640.
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- O*- and *C*-acetyl derivatives, and their reactions (DIECKMANN and STEIN), 1904, A., i, 874.
- disemicarbazone (HAAS), 1906, T., 198.
- Dimethyldihydroresorcinol**, 4-amino-, and its hydrochloride, platinichloride, and acetyl derivative, and the action of nitrous acid on (HAAS), 1907, T., 1443; P., 192.
- Dimethyldihydroresorcinol**, 4-nitro-, and its salts, and reduction (HAAS), 1907, T., 1441; P., 192.
- 4-isonitroso-, and its oximes and salts, and the action of oxidising and reducing agents on (HAAS), 1907, T., 1437; P., 191.
- Dimethyldihydroretene**, dihydroxy- (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- α -Dimethyldihydrosorbic acid** (octenoic acid), β -hydroxy-, and its ethyl ester and salts, synthesis of (JAWORSKY and REFORMATZKY), 1903, A., i, 4; (JAWORSKY), 1903, A., i, 730.
- β -Dimethyldihydrosorbic acid** (octenoic acid) (RUPE and LOTZ), 1903, A., i, 229.
- 4:4'-Dimethyldihydrostilbazole** and its additive salts (LANGER), 1906, A., i, 38.
- 4:4'-Dimethyldihydrostilbazole**, β -hydroxy- (4-methylpicolyl-*p*-tolylalkine), and its additive salts (LANGER), 1906, A., i, 38.
- 3:4-Dimethyl-2:3-dihydrothiazole**, 2-imino-, *N*-acetyl derivative of (YOUNG and CROOKES), 1905, P., 308.
- Dimethyl-1:6-dihydro-1:2:4-triazine**, 3:5-dihydroxy- (BAILEY), 1903, A., i, 130.
- α -Dimethyldihydouracil** (2:6-dioxy-3:4-dimethyltetrahydropyrimidine), trihydroxy- (HENKEL), 1911, A., i, 159.
- β -Dimethyldihydouracil** (2:6-dioxy-1:4-dimethyltetrahydropyrimidine) trihydroxy- (HENKEL), 1911, A., i, 160.
- 4:5-Dimethyldihydouracil**, 4-bromo-5-hydroxy- (KIRCHER), 1912, A., i, 54.
- Dimethyl diketone** (diacetyl), preparation of (DIELS and STEPHAN), 1907, A., i, 1000.
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- polymeride of, ketone $C_8H_{14}O$, from the reduction of the (DIELS and JOST), 1903, A., i, 427.
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- additive compounds of, with benzylhydroxylamine, naphthylhydroxylamine, phenylhydroxylamine, and *p*-tolylhydroxylamine (SCHEIBER and WOLFF), 1907, A., i, 1029.
- phenylmethylhydrazone (DIELS and KOLLISCH), 1911, A., i, 230.
- oxime and hydroxy-, and their derivatives (DIELS and FARKAS), 1910, A., i, 535.

- Dimethyl diketone** (*diacetyl*), oxime and its benzoyl derivative and its decomposition (DIELS and STERN), 1907, A., i, 480.
- azine** of (FORSTER and DEY), 1912, T., 2240.
- methyl ether**, condensations of, with benzaldehyde and with ethyl oxalate (DIELS and STERN), 1907, A., i, 466.
- benzyl ether** and its phenylhydrazone (DIELS and TER MEER), 1909, A., i, 455.
- monosemicarbazone** and its sodium salt (BILTZ and HORRMANN), 1908, A., i, 516.
- semicarbazone** and its acetate (BILTZ and HORRMANN), 1908, A., i, 516.
- Dimethyl- $\alpha\beta$ -dimethylallylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 822.
- Dimethyldioscoridine** (GORTER), 1911, A., i, 561.
- 1:3-Dimethyldioxindole methyl ether**, 5-bromo- (KOHN and OSTERSETZER), 1912, A., i, 51.
- Dimethyldipentene** and its salts (RICHAUD), 1911, A., i, 733.
- 3:3'-Dimethyldicyclopentyl** (SCHMIDT and SIGWART), 1912, A., i, 616.
- 4:4'-Dimethyldiphenic acid** (LIEBERMANN), 1911, A., i, 656.
- 2:2'-Dimethyldiphenyl** (2:2'-*ditolyl*), formation of ring compounds from (KENNER), 1912, P., 187.
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- 2:2'-Dimethyldiphenyl**, $\omega\omega$ -*dibromo*-, and $\omega\omega\omega'$ -*tetrabromo*- (KENNER and TURNER), 1911, T., 2108; P., 93.
- 3:3'-Dimethyldiphenyl** (3:3'-*ditolyl*), (WINSTON), 1904, A., i, 274.
- and 4:4'-*dichloro*- and 4:4'-*dinitro*- (SCHULTZ, ROHDE, and VICARI), 1907, A., i, 245.
- 3:3'-Dimethyldiphenyl**, *diamino*-. See Tolidine.
- 3-bromo-3'-nitro-4:4'-*di*hydroxy-, and 5:5'-*dinitro*-4:4'-*di*hydroxy- (MOIR), 1911, P., 227.
- 4-nitroso-4'-amino-, acetyl derivative (CAIN), 1909, T., 717; P., 123.
- 4:4'-Dimethyldiphenyl** (4:4'-*ditolyl*), phenylated derivatives of (TSCHITSCHIBABIN), 1907, A., i, 503.
- 4:4'-Dimethyldiphenyl** 2:2' and 3:3'-*di*bromo-, and 2:2':5:5'-*tetra*bromo-, *disulphides* (ZINCKE and FROHNEBERG), 1910, A., i, 315.
- Dimethyldiphenyls**, 2:2'- and 4:4'-, dinitro-derivatives of (ULLMANN and FRENTZELL), 1905, A., i, 308.
- 2:2'-, 3:3'-, and 4:4'- (ULLMANN), 1904, A., i, 725.
- 1':4'-Dimethyldiphenylamine**, 1:2'-*di*hydroxy- (CASSELLA & Co.), 1908, A., i, 417.
- N-S-Dimethyldiphenylamine-*o*-sulphonium iodide** mercuri-iodide (BARNETT and SMILES), 1910, T., 985.
- 4:4'-Dimethyldiphenylcarboxylic acid** (LIEBERMANN and KARDOS), 1912, A., i, 465.
- 2:2'-Dimethyldiphenyldicarboxylic acid** and its dimethyl ester (LIEBERMANN and RAHTS), 1912, A., i, 466.
- 3:3'-Dimethyldiphenyl-4:4'-dicarboxylic acid**, esters of (LIEBERMANN and KARDOS), 1912, A., i, 466.
- 4:4'-Dimethyldiphenyl-2:2'-dicarboxylic acid** and its methyl ester (LIEBERMANN and KARDOS), 1912, A., i, 465.
- 4:4'-Dimethyldiphenyl-2:3-dicarboxylic acid**, derivatives of (LIEBERMANN and KARDOS), 1912, A., i, 465.
- 3:3'-Dimethyldiphenyl-4:4'-diphthalamic acid** and its sodium salt (CAIN and BRADY), 1912, T., 2307.
- 3:8-Dimethyldiphenyleneazone** and its oxide (ULLMANN and DIETERLE), 1904, A., i, 269.
- 3:3'-Dimethyldiphenyleneiodonium** hydroxide and its salts (MASCARELLI and CERASOLI), 1910, A., i, 725.
- Dimethyldiphenylmethane**. See *Ditolylmethane*.
- 2:5-Dimethyldiphenylmethane-4'-trimethylammonium hydroxide** and salts; 3:6-*dibromo*-4-hydroxy-, and the acetyl derivative of the hydroxide (AUWERS and JACOB), 1904, A., i, 996.
- 1:1'-Dimethyl-5:6:5':6'-diphthaloyl-2:2'-dinaphthyl** (SCHOLL, NEUBERGER, TRITSCH, and POTSCHWAUSCHEG), 1912, A., i, 564.
- 2:6-Dimethyl-3:4:7:8-diphthaloylthi-anthrene** (SCHOLL and SEER), 1911, A., i, 558.
- NN'-Dimethyl-NN'-dipropyl-pp'-di-aminodiphenylmethane** (FRÜHLICH), 1911, A., i, 494.
- Dimethyldipropylarsonium iodide** and its compound with mercuric chloride (DEHN and WILCOX), 1908, A., i, 722.
- 1:8-Dimethyl-4:5-diisopropyl-xanthen** and -xanthone (FOSSE and ROBYN), 1903, A., i, 647.
- 4:4'-Dimethyldipyridyl** and its additive salts (AHRENS), 1905, A., i, 232.

5:5'-Dimethyl-8:8'-diquinolyl and its salts (V. NIEMENTOWSKI and SEIFERT), 1905, A., i, 300.

1:1'-Dimethyl-4:4'-di-*p*-tolyl-9:9'-dianthrone-10:10' (SEER and KARL), 1912, A., i, 572.

Dimethyleneacetone, *dihydroxy-*, and its ethers and benzoates (WILLSTÄTTER and PUMMERER), 1905, A., i, 457.

Dimethylenedioxystilbene and its dibromide (STOBBE and LENZNER), 1911, A., i, 374.

Dimethylenedioxystyryl ketone (*dipiperonylideneacetone*) monopicate (VORLÄNDER and SIEBERT), 1905, A., i, 793.

β -Dimethylene- Δ -hexinene (DUPONT), 1911, A., i, 174.

3:4:3':4'-Dimethylenetetraoxydi-benzyl- and -stilbene (MANCHOT, ZAHN, and KRÄNZLEIN), 1906, A., i, 752.

Dimethylenetetraoxydihydroanthracene, 2:3:6:7-(or 1:2:5:6-) (EWINS), 1909, T., 1486; P., 211.

4:5-Dimethylenetetraoxydiphenylglyoxalone (BILTZ and STELLBAUM), 1905, A., i, 674.

5:6-Dimethyltetraoxydiphenyltriazine, 3-hydroxy-, and its acetyl derivative and sodium salt (BILTZ and ARND), 1905, A., i, 675.

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Dimethylethinediphthalide, *dihydroxy-* (LIEBERMANN and VOSWINCKEL), 1904, A., i, 903.

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$\alpha\alpha$ -Dimethyl- α -ethylacetophenone and its oxime (HALLER and BAUER), 1909, A., i, 109.

$\beta\beta$ -Dimethyl- α -ethylacrylic acid, its chloride and ethyl ester (BLAISE and MAIRE), 1909, A., i, 85.

2:6-Dimethyl-5-ethyl-1:3:7:9-benzotetrazole, 4-hydroxy- (BÜLOW and HAAS), 1910, A., i, 203.

Dimethylethylbutenylcarbinol (PERKIN and PICKLES), 1905, T., 659; P., 131.

Dimethylethylisobutylsilicane (BYGDEN), 1911, A., i, 846.

Dimethylethylcarbinol, amino-, and its divaleryl and dibromovaleryl derivatives and hydrochloride (RIEDEL), 1908, A., i, 250.

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4:7-Dimethyl-3-ethylcoumarin (FRIES and KLOSTERMANN), 1908, A., i, 822.

1:9-Dimethyl-7-ethylspiro-5:5-dihydantoin (*hypothyltheobromine*) (BILTZ and KREBS), 1911, A., i, 241.

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1:2-Dimethyl-2-ethyldihydroquinoline and its methiodide (FREUND and RICHARD), 1909, A., i, 418.

s-**Dimethylethylene oxide** (HENRY), 1907, A., i, 817, 887.

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$\alpha\gamma$ -Dimethyl- β -ethylglutaric acid, **$\alpha\gamma$ -dihydroxy-**, derivatives of (FITTIG and PETERS), 1907, A., i, 473.

1:1-Dimethyl-3-ethylcyclohexane, 3-bromo- (CROSSLEY and GILLING), 1910, T., 2222.

$\beta\beta$ -Dimethyl- δ -ethylhexan- γ -ol and its phenylurethane (HALLER and BAUER), 1910, A., i, 220.

1:1-Dimethyl-3-ethylcyclohexan-3-ol (CROSSLEY and GILLING), 1910, T., 2222.

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1:1-Dimethyl-3-ethylcyclohexene (CROSSLEY and GILLING), 1910, T., 2222.

1:1-Dimethyl-5-ethyl- Δ^4 -cyclohexen-3-one and its semicarbazone (CROSSLEY and GILLING), 1908, P., 281; 1909, T., 28.

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- 1:3-Dimethyl-5-ethylidene- Δ^3 -cyclohexene (AUWERS and PETERS), 1910, A., i, 826.
- 2:5-Dimethyl-1-ethylindole (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 516.
- 1:3-Dimethyl-2-ethylindole and its picrate (PLANCHER), 1903, A., i, 114.
- 3:3-Dimethyl-2-ethylindolenine and its salts and benzoyl derivatives (PLANCHER and BONAVIA), 1903, A., i, 433.
- 2:3-Dimethyl-3-ethylindolenine salts (PLANCHER), 1903, A., i, 433.
- 1:3-Dimethyl-3-ethyl-2-methyleneindoline and its acyl derivatives (PLANCHER; PLANCHER, and BONAVIA), 1903, A., i, 433.
- $\beta\beta$ -Dimethyl- γ -ethylpentane- $\alpha\gamma$ -diol and its acetate and urethane (LETELLIER), 1908, A., i, 242.
- $\beta\beta$ -Dimethyl- η -ethyl- $\Delta\gamma^{\delta}$ -pentenol (LETELLIER), 1908, A., i, 242.
- Di-2-methyl-4-ethylphenyliodonium-hydroxide and iodo-, and their salts (WILLGERODT and JAHN), 1912, A., i, 21.
- 1:3-Dimethyl-6-ethyl-3-propyl- Δ^6 -cyclohexene-2 carboxylic acid, 5-imino-2-cyano- (GARDNER and HAWORTH), 1909, T., 1962.
- Dimethylethylpropylsilicane (BYGDEN), 1911, A., i, 846.
- Dimethylethylpyrone and its isomeride and hydrochloride and platinichloride (BAIN), 1906, T., 1228; P., 196.
- 3:5-Dimethyl-2-ethyl-4:6-pyronone (WEDEKIND and HAEUSSERMANN), 1908, A., i, 671.
- 2:4-Dimethyl-3-ethylpyrrole and its picrate (KNORR and HESS), 1911, A., i, 1020; (FISCHER and BARTHOLOMÄUS), 1912, A., i, 646.
- and its derivatives (WILLSTÄTTER and ASAHINA), 1912, A., i, 127.
- 2:5-Dimethyl-3-ethylpyrrole (KNORR and HESS), 1911, A., i, 1019.
- 2:3-Dimethyl-5-ethylpyrrole (FISCHER and BARTHOLOMÄUS), 1912, A., i, 646.
- 2:5-Dimethyl-1-ethylpyrrole-3-carboxylic acid, ethyl ester, synthesis of (KORSCHUN), 1904, A., i, 264.
- 2:5-Dimethyl-3-ethylpyrrole-4-carboxylic acid, and its ethyl ester (KNORR and HESS), 1911, A., i, 1019.
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- Dimethylethylpyruvic acid and its phenylhydrazone and calcium salt (ANSCHÜTZ and RAUFF), 1903, A., i, 555.
- 2:5-Dimethyl-3-ethyltetrahydrofuran, 3-hydroxy- (DUPONT), 1912, A., i, 291.
- 1:2-Dimethyl-2-ethyltetrahydroquinoline and its hydrochloride and picrate (FREUND and RICHARD), 1909, A., i, 418.
- Dimethylethyl- ψ -thiocarbamide ethiodide (SCHENCK), 1911, A., i, 843.
- 3:7-Dimethyl-1-ethylxanthine, soluble double salts of (RIEDEL), 1906, A., i, 716.
- Dimethylfluoran, a xanthonium ferri-chloride from (DECKER, v. FELLENBURG, and FERRARIO), 1907, A., i, 1066.
- dihydrobromide (GOMBERG and CONE), 1910, A., i, 872.
- Dimethylfluoran, dibromo- and dichloro- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 149.
- 2:7-Dimethylfluoran, quinonoid ester salts of (GREEN and KING), 1908, A., i, 1003.
- 2:7-Dimethylfluoran, 4'(5')-hydroxy- (BENTLEY, GARDNER, and WEIZMANN), 1907, T., 1639.
- 3:6-Dimethylfluoran and 4'(5')-hydroxy- (BENTLEY, GARDNER, and WEIZMANN), 1907, T., 1636.
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- stannichloride (LAMBRECHT), 1909, A., i, 949.
- 3:6-Dimethylfluorananilide (LAMBRECHT), 1909, A., i, 950.
- 3:6-Dimethylfluoranphenylhydrazide (LAMBRECHT), 1909, A., i, 949.
- 5:7-Dimethylfluorane, 8-hydroxy-, and its reduction product, bromo-derivatives and compounds with methyl and ethyl alcohols (LIEBSCHÜTZ and WENZEL), 1904, A., i, 518.
- 8-Dimethylformopyronine and its leucobase and platinichloride (BIEHRINGER, GLÜCKSBERG, and TANZEN), 1912, A., i, 891.
- Dimethylfulvene and isonitroso- (THIELE and BALHORN), 1906, A., i, 639.
- 1:4-Dimethylfuran, stereochemistry of (CAMPO Y CERDÁN), 1910, A., i, 868.
- 2:5-Dimethylfuran, *di- ω* -hydroxy-, and its diacetyl derivative (BLANKSMA), 1911, A., i, 75.
- 2:5-Dimethylfuran-3-carboxylic acid, ethyl ester (KORSCHUN), 1904, A., i, 614.
- 2:5-Dimethylfuran-3-carboxylic acid, tetrabromo- (TREFILIEFF), 1908, A., i, 735.

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1:1-Dimethylgeraniol (AUSTERWEIL and COCHIN), 1910, A., i, 687.

$\alpha\alpha$ -Dimethylglutaconic acid and its anhydride and anilino-acid (BLAISE), 1903, A., i, 316.

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$\alpha\gamma$ -Dimethylglutaconic acid, derivatives (THOLE and THORPE), 1911, T., 2235.

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$\beta\gamma$ -Dimethylglutaconic acid, α -cyano-, ethyl ester (BLAND and THORPE), 1912, T., 887.

Dimethylglutaconic acids (BLAISE), 1903, A., i, 400.

$\alpha\alpha$ -Dimethylglutaconic acids, *cis*- and *trans*-, synthesis of (PERKIN and SMITH), 1903, T., 8; P., 214.

$\alpha\gamma$ -Dimethylglutaconic acids (FEIST and REUTER), 1910, A., i, 9.

***N*-Dimethylglutamic acid** (NOVÁK), 1912, A., i, 338.

Dimethylglutaranil (KIJNER), 1911, A., i, 42.

$\alpha\alpha$ -Dimethylglutaric acid, preparation of, from sulphocamphenolcarboxylic acid (HARVEY and LAPWORTH), 1903, 1113; P., 148.

synthesis of (BLANC), 1904, A., i, 369.

synthesis of, and *cis*- and *trans*- $\beta\gamma$ -dibromo- and β -hydroxy- (PERKIN and SMITH), 1903, T., 8.

synthesis of, and β -iodo- (BLAISE), 1903, A., i, 604.

silver and aniline salts of (KIJNER), 1911, A., i, 42.

$\alpha\alpha$ -Dimethylglutaric acid, $\alpha\alpha$ -*di*hydroxy-, derivatives of (FITTIG and KRAUS), 1907, A., i, 472.

β -imino- α -cyano-, ethyl ester (BARON, REMFERY, and THORPE), 1904, T., 1751.

α - and β -forms of, and ethyl hydrogen ester (CAMPBELL and THORPE), 1910, T., 1309; P., 176.

***cis*- $\alpha\alpha$ -Dimethylglutaric acid** and anhydride (BLAISE), 1903, A., i, 316.

$\alpha\beta$ -Dimethylglutaric acid and anhydride, and its anilino- and *p*-toluidino-derivatives (BLAISE), 1903, A., i, 315.

$\beta\beta$ -Dimethylglutaric acid, preparation of (THOLE and THORPE), 1911, T., 434.

preparation of, and electrolysis of its salts (WALKER and WOOD), 1906, T., 598; P., 104.

$\beta\beta$ -Dimethylglutaric acid, α -cyano-, ethyl ester, sodium derivative, action of ethyl α -bromo-propionate on (PERKIN and THORPE), 1906, T., 792.

Dimethylglutaric acids, $\alpha\alpha$ - and $\beta\beta$ -, and their β -naphthylamides (BLANC), 1905, A., i, 680.

$\alpha\beta$ -Dimethylglutaric acids (*pentanedicarboxylic acids*), *cis*- and *trans*-, and their derivatives (THORPE and YOUNG), 1903, T., 351.

Dimethylglutazine and its carboxylic acid, ethyl ester, and their dibenzoyl derivatives (BARON, REMFERY, and THORPE), 1904, T., 1753; P., 243.

$\beta\beta$ -Dimethylglycidic acid, ethyl ester, and sodium salt (CLAISEN), 1905, A., i, 288.

condensation of, with halogen compounds (DARZENS), 1911, A., i, 259.

condensation of, with ethyl bromoacetate (DARZENS and SEJOURNÉ), 1911, A., i, 420.

condensation of, with ethyl sodiomalonate (HALLER and BLANC), 1906, A., i, 625.

***C*-Dimethyl-glycolcyanamide** and -glycollylcarbamide and its double salts (CLEMMENSEN and HEITMAN), 1908, A., i, 771.

Dimethylglycolurils, isomerides, and their separation (WEITZNER), 1908, A., i, 841.

1:2-Dimethylglyoxaline and its salts (JOWETT and POTTER), 1903, T., 469; P., 56.

1:4-Dimethylglyoxaline, and 2(or 5)-bromo-, and 2:5-*di*bromo-, and their salts (PYMAN), 1910, T., 1821, 1828, 1831; P., 212.

- 1:4-(1:5)-Dimethylglyoxaline and its salts (JOWETT), 1903, T., 445; P., 55.
preparation and properties of, and its salts and dibromo-derivative (JOWETT and POTTER), 1903, T., 464; P., 56.
- 1:5-Dimethylglyoxaline, and 2 (or 4)-bromo-, and their salts (PYMAN), 1910, T., 1823, 1829; P., 212.
- 2:4-Dimethylglyoxaline and its salts (WINDAUS), 1907, A., i, 90, 288.
- 2:5-Dimethylglyoxaline, 4-nitro-, and its potassium derivative (WINDAUS), 1909, A., i, 258.
- 4:5-Dimethylglyoxaline picrate (JOWETT), 1905, T., 407; P., 116; (WINDAUS), 1909, A., i, 258.
- 4:5-Dimethylglyoxaline and its diacetate (BILTZ and HORMANN), 1908, A., i, 56.
- 1:3-Dimethyl-2-glyoxalone-4-carboxylic acid (BEYTHIEN), 1912, A., i, 588.
- Dimethylglyoxime, preparation of (GANDURIN), 1908, A., i, 400; (BILTZ), 1909, A., i, 208.
action of, on platinum salts (WUNDER and THURINGER), 1912, A., ii, 1102.
as a reagent for ferrous salts (SLAWIK), 1912, A., ii, 299.
cobalt derivatives of (TSCHUGAEFF), 1907, A., i, 904.
dibenzozate (DIELS and STERN), 1907, A., i, 481.
- Dimethylglyoximincobalt salts, compounds with ammonia and amines (TSCHUGAEFF), 1906, A., i, 815.
- Δ^4 -desDimethylgranatanine and des- ψ -Dimethylgranatoline and its isomeride (WILLSTÄTTER and VERAGUTH), 1905, A., i, 543.
- $\beta\beta$ -Dimethylguanidine, salts of (SCHENCK), 1912, A., i, 685.
- Dimethylguanidines, $\alpha\alpha$ - and $\alpha\beta$ -, salts of (SCHENCK), 1912, A., i, 425.
- Dimethylguanidines, $\alpha\beta$ - and $\beta\beta$ -, picrolonates and picrates of (WHEELER and JAMESON), 1908, A., i, 253.
- Dimethylhaemin, oxidation of (KÜSTER and GREINER), 1912, A., i, 923.
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- Dimethylhemisparteilene and its derivatives (MOUREU and VALEUR), 1912, A., i, 210.
- $\gamma\zeta$ -Dimethyl- $\Delta^{\beta\delta}$ -heptadiene and its dihydrobromide (ABELMANN), 1910, A., i, 455.
- $\beta\zeta$ -Dimethyl- $\Delta^{\beta\epsilon}$ -heptadiene, and its diozonide (HARRIES and WEIL), 1904, A., i, 361.
- $\beta\zeta$ -Dimethyl- $\Delta^{\beta\zeta}$ -heptadiene and its diozonide (HARRIES and TÜRK), 1906, A., i, 227.
- 3:5-Dimethyl- $\Delta^{1:5}$ -cycloheptadiene-1-carboxylic acid (BUCHNER and DELBRÜCK), 1908, A., i, 88.
- 2:5-Dimethyl- $\Delta^{2:5}$ -cycloheptadiene-7-carboxylic acid and its derivatives (BUCHNER and SCHULZE), 1911, A., i, 52.
- 2:5-Dimethyl- $\Delta^{2:6}$ -cycloheptadiene-7-carboxylic acid, and its amide (BUCHNER and SCHULZE), 1911, A., i, 52.
- $\beta\delta$ -Dimethylheptane (CLARKE and BEGGS), 1912, A., i, 150.
- $\beta\zeta$ -Dimethylheptane, action of nitric acid on, and its amino-derivatives and their salts and dibenzoyl derivative (KONOWALOFF), 1907, A., i, 2.
- $\beta\zeta$ -Dimethylheptane, $\beta\zeta$ -dibromo-, (HARRIES and WEIL), 1904, A., i, 361.
- $\delta\zeta$ -Dimethylheptane, $\alpha\beta\delta$ -trihydroxy- (MARKO), 1904, A., i, 642.
- 3:5-Dimethylcycloheptane-carbolactone and -carboxylic acid and its amide and silver salt (BUCHNER and DELBRÜCK), 1908, A., i, 88.
- 2:5-Dimethylcycloheptane-7-carboxylic acid, and its amide and 7-bromo-, (BUCHNER and SCHULZE), 1911, A., i, 52.
- $\beta\zeta$ -Dimethylheptane- $\beta\zeta$ -diol (BRUYLANTS), 1909, A., i, 625.
its diacetate (RUPE and SCHLOCHOFF), 1905, A., i, 414.
- Dimethylcycloheptanediol and its diacetate (GRIGNARD and VIGNON), 1907, A., i, 690.
- $\delta\zeta$ -Dimethylheptane- $\beta\delta\zeta$ -triol (BOUVEAULT and LEVALLOIS), 1911, A., i, 3.
- $\delta\zeta$ -Dimethylheptan- β -ol and its acetyl derivative (GUERBET), 1909, A., i, 690.
- $\beta\delta$ -Dimethylheptan- δ -ol (BODROUX and TABOURY), 1909, A., i, 546.
- $\beta\epsilon$ -Dimethylheptan- ϵ -ol (CLARKE and BEGGS), 1912, A., i, 151.
- $\delta\zeta$ -Dimethylheptan- β -one semicarbazone (GUERBET), 1909, A., i, 690.
- 2:5-Dimethyl- $\Delta^{2:4:7}$ -cycloheptatriene-7-carboxylic acid (BUCHNER and SCHULZE), 1911, A., i, 51.
- 2:5-Dimethyl- $\Delta^{2:5:7}$ -cycloheptatriene-7-carboxylic acid and its derivatives (BUCHNER and SCHULZE), 1911, A., i, 51.

- 2:5-Dimethyl- $\Delta^{7:2:5}$ -cycloheptatriene-7-carboxylic acid** (BUCHNER and SCHULZE), 1911, A., i, 51.
- 3:5-Dimethylcyclo- $\Delta^{2:5:7}$ and $\Delta^{3:5:7}$ -heptatriene-1-carboxylic acids** (BUCHNER and DELBRÜCK), 1908, A., i, 87.
- 3:5-Dimethyl- $\Delta^{5:5}$ -cycloheptene-1-carboxylic acid** (BUCHNER and DELBRÜCK), 1908, A., i, 88.
- Dimethylheptenol** (RUPE and SCHLOCHOFF), 1905, A., i, 414.
- tert.-Dimethylheptenol, ozonide of** (HARRIES and LANGHELD), 1906, A., i, 226.
- $\delta\zeta$ -Dimethyl- Δ^{α} -hepten- δ -ol** (BODROUX and TABOURY), 1909, A., i, 547.
- $\gamma\zeta$ -Dimethyl- Δ^{β} -hepten- δ -ol and its acetate and chloride** (ABELMANN), 1910, A., i, 455.
- $\delta\zeta$ -Dimethyl- Δ^{β} -hepten- δ -ol** (GRY), 1908, A., i, 307.
- $\beta\beta$ -Dimethyl- Δ^{ζ} -hepten- γ -one** (HALLER and BAUER), 1910, A., i, 220.
- $\alpha\gamma$ -Dimethyl- Δ^{δ} -heptenonitrile** (BREDDT and WORNAST), 1903, A., i, 770.
- Dimethylheptenylamine and its salts** (V. BRAUN), 1912, A., i, 165.
- $\alpha\delta$ -Dimethylheptioic acid, β -hydroxy-, synthesis and properties of, and its salts and lactone** (RAICHSTEIN), 1907, A., i, 822.
- Dimethyl-*n*-heptylamine and its salts** (V. BRAUN), 1911, A., i, 611.
- Dimethylheptylcarbinol (decyl alcohol)** (HOUBEN), 1903, A., i, 48.
- $\beta\epsilon$ -Dimethyl- $\Delta^{\alpha\epsilon}$ -hexadiene and its diozonide** (HARRIES and TÜRK), 1906, A., i, 228.
- $\gamma\epsilon$ -Dimethyl- $\Delta^{\beta\delta}$ -hexadiene and its dihydrobromide** (ABELMANN), 1910, A., i, 455.
- $\beta\epsilon$ -Dimethyl- $\Delta^{\beta\epsilon}$ -hexadiene and its dibromide** (HARRIES and TÜRK), 1906, A., i, 227.
- 1:3-Dimethylcyclohexadiene (dihydro-m-xylene)** (HARRIES and ANTONI), 1903, A., i, 614.
- diozonide** (HARRIES and NERESHEIMER), 1906, A., i, 833.
- 1:4-Dimethyl- $\Delta^{1:3}$ -cyclohexadiene, formation of, from dichloro- $\alpha\beta$ -pulenone, and its 2-carboxylic acid** (AUWERS and HESSENLAND), 1908, A., i, 551.
- 1:1-Dimethyl- $\Delta^{3:4}$ -cyclohexadiene, 3:5-dichloro-** (CROSSLEY and LESUEUR), 1903, T., 112.
- action of bromine on** (CROSSLEY), 1904, T., 264; P., 21.
- 1:1-Dimethyl- $\Delta^{2:5}$ -cyclohexadiene, so-called, of Harries and Antoni** (CROSSLEY and RENOUEF), 1909, T., 930; P., 145.
- 1:3-Dimethyl- $\Delta^{3:5}$ -cyclohexadiene, dihydrochloride of** (AUWERS and PETERS), 1910, A., i, 827.
- Dimethyl- $\Delta^{2:4}$ -cyclohexadienes, 1:3- and 1:4-** (ZELINSKY and GORSKY), 1908, A., i, 722.
- 1:1-Dimethyl- $\Delta^{2:4}$ and $2:5$ -cyclohexadienes** (HARRIES and ANTONI), 1903, A., i, 614; (CROSSLEY and LESUEUR), 1903, A., i, 804; (CROSSLEY and RENOUEF), 1908, T., 629; P., 59.
- 1:4-Dimethyl- $\Delta^{1:3}$ -cyclohexadiene-2-carboxylic acid and its methyl ester** (AUWERS and HESSENLAND), 1908, A., i, 551; (BRÜHL), 1908, A., ii, 1003.
- $\beta\epsilon$ -Dimethylhexa- $\Delta^{\alpha\epsilon}$ -dien- $\Delta\gamma$ -inene** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 329.
- 1:1-Dimethyl- $\Delta^{3:5}$ -cyclohexadien-5-ol, 3-amino-, and its reactions and additive salts and acetyl derivative** (HAAS), 1906, T., 192.
- 3:6-Dimethylhexahydropyridazine and its hydrochloride** (PAAL and KOCH), 1905, A., i, 92.
- 5-Dimethylhexahydro-6-pyrimidone, 2:4-dimino-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.
- 5-Dimethyl- and 5-diethyl-hexahydro-6-pyrimidones, 4-imino-2-thio-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 461.
- 3:5-Dimethylhexahydrotriazine, 1-imino-6-cyano-, and its picrate and nitroso-derivative** (POHL), 1908, A., i, 576.
- $\beta\gamma$ -Dimethylhexane, synthesis of** (CLARKE), 1911, A., i, 345.
- $\beta\delta$ -Dimethylhexane (methyl ethylisobutylmethane)** (CLARKE), 1908, A., i, 593.
- $\beta\epsilon$ -Dimethylhexane** (CLARKE), 1909, A., i, 350.
- action of nitric acid on, and its amino-derivatives and their salts and dibenzoyl derivative** (KONOWALOFF), 1907, A., i, 1.
- $\beta\epsilon$ -dibromide** (HARRIES and TÜRK), 1906, A., i, 227.
- $\beta\epsilon$ -Dimethylhexane, $\alpha\beta\zeta$ -tetrabromo- (diisobutenyl tetrabromide)** (POGORZELSKY), 1906, A., i, 131.
- $\beta\epsilon$ -dichloro-** (HENRY), 1906, A., i, 922.
- $\gamma\delta$ -Dimethylhexane, $\gamma\delta$ -diamino-, and its additive salts, and $\gamma\delta$ -dinitro-** (BEWAD and PIRINSKY), 1906, A., i, 393.
- 1:1-Dimethylcyclohexane, synthesis of, and 3-bromo-, 3-iodo-, and 3-hydroxy-, and its acyl derivatives and 3:4-dibromo-** (CROSSLEY and RENOUEF), 1904, P., 242; 1905, T., 1487; P., 209.

- 1:1-Dimethylcyclohexane.** supposed identity of, with dihydrolaurelene and dihydroisolaurelene (CROSSLEY and RENOUF), 1905, P., 303; 1906, T., 261.
and 3-hydroxy-, densities, magnetic rotations, and refractive powers of (PERKIN), 1905, T., 1491.
- 1:1-Dimethylcyclohexane,** 3-bromo-, action of alcoholic potassium hydroxide on (CROSSLEY and RENOUF), 1906, T., 1556; P., 253.
- 2:3:5:6-tetrabromo-** (CROSSLEY and RENOUF), 1908, T., 650.
- 1:3-Dimethylcyclohexane** from camphoric acid (BALBIANO and ANGELONI), 1904, A., i, 860.
- Dimethylcyclohexanes,** 1:2-, 1:3-, and 1:4- (SABATIER and MAILHE), 1905, A., i, 588.
- $\beta\epsilon$ -Dimethylhexane- $\beta\epsilon$ -diol** (*octylene ditert.- γ -glycol*) (POGORZELSKY), 1904, A., i, 214; (HARRIES and TÜRK), 1906, A., i, 227; (HENRY), 1906, A., i, 922.
hexahydrate (BRUYLANTS), 1909, A., i, 625.
- $\gamma\delta$ -Dimethylhexane- $\gamma\delta$ -diol** (*dimethyl-diethyldicarbinal*), and its diethyl ether and dichloride (FRUMINA), 1910, A., i, 150.
- $\beta\beta$ -Dimethylhexane- $\gamma\epsilon$ -dione,** and its sodium and copper salts (COUTURIER), 1910, A., i, 362.
- $\beta\beta$ -Dimethylhexan- γ -ol** and its phenylurethane (HALLER and BAUER), 1910, A., i, 220.
- $\beta\gamma$ -Dimethylhexan- β -ol** (CLARK), 1911, A., i, 345.
- $\beta\gamma$ -Dimethylhexan- γ -ol** (CLARK), 1911, A., i, 345.
- $\beta\delta$ -Dimethylhexan- δ -ol** (BODROUX and TABOURY), 1909, A., i, 546.
- $\beta\epsilon$ -Dimethylhexan- β -ol** (CLARK), 1909, A., i, 350.
- 1:1-Dimethylcyclohexan-3-ol** (BLANC), 1907, A., i, 220.
- $\beta\delta$ -Dimethylhexan- β - and - δ -ols** (CLARK), 1908, A., i, 593.
- Dimethylcyclohexanols,** 1:2-, 1:3-, and 1:4-, synthesis of (SABATIER and MAILHE), 1905, A., i, 587.
- Dimethylcyclohexanols,** secondary, synthesis of three, and their phenylcarbamates (SABATIER and MAILHE), 1906, A., i, 253.
- 2:6-Dimethylcyclohexan-4-ol-1-carbinol,** and its diacetate (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 411.
- 1:3-Dimethylcyclohexan-1-ol-3-carboxylic acid** and its calcium salt and lactone (RUPE and LIECHTENHAN), 1908, A., i, 390.
- 2:6-Dimethylcyclohexan-4-ol-1-carboxylic acid,** and its lactones and ethyl ester (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 411.
- 2:6-Dimethylcyclohexan-4-ol-1-carboxylic acids,** isomeric, and their oxidation (MERLING, WELDE, and SKITA), 1905, A., i, 349.
- 1:3-Dimethylcyclohexan-5-ol-1:5-dicarboxylic acid** (KNOEVENAGEL), 1904, A., i, 1028.
- $\beta\beta$ -Dimethylhexan- γ -one** and its oxime, (HALLER and BAUER), 1910, A., i, 220.
- 1:1-Dimethylcyclohexan-3-one** and its oxidation and its oxime and semicarbazone (CROSSLEY and RENOUF), 1906, P., 303; 1907, T., 81.
and its semicarbazone (BLANC), 1907, A., i, 220.
and its 4(or 6)-benzylidene derivative (BLANC), 1908, A., i, 655.
- 1:1-Dimethylcyclohexan-3-one,** 4-oximino-5-imino-, and its potassium salt and oxime, and its reduction (HAAS), 1907, T., 1445; P., 192.
- 1:1-Dimethylcyclohexan-6-one,** and its semicarbazone (MEERWEIN and UNKEL), 1910, A., i, 857.
- 1:3-Dimethylcyclohexan-5-one,** 1-cyano-, and its semicarbazone and 1-carboxylic acid (KNOEVENAGEL and LANGE), 1904, A., i, 1027.
- 1:4-Dimethylcyclohexan-2-one** and its semicarbazone (HARDING, HAWORTH, and PERKIN), 1908, T., 1970.
- Dimethylcyclohexanones,** isomeric and their semicarbazones (SABATIER and MAILHE), 1906, A., i, 253.
- 1-Dimethylcyclohexan-3-one-1-carboxylic acid,** ethyl ester (KÖRTZ and HESSE), 1906, A., i, 88.
- 1:3-Dimethylcyclohexanone-5-carboxylic acid,** ethyl ester (SKITA), 1909, A., i, 479.
- 2:4-Dimethylcyclohexan-6-one-1:3-dicarboxylic acid,** 4-hydroxy-, esters of the tautomeric forms of (KABE and BILLMANN), 1904, A., i, 749.
- 3':3'-Dimethylhexaphenyl-*p*-xylene,** 4':4'-diamino-, and its dihydrochloride (ULLMANN and SCHLAEPFER), 1904, A., i, 570.
- $\beta\epsilon$ -Dimethyl- $\Delta\beta$ -hexene,** ϵ -amino-, and its additive salts (PAULY and HÜLTENSCHMIDT), 1904, A., i, 88.

- 1:1-Dimethyl- Δ^3 -cyclohexene**, synthesis of (CROSSLEY and RENOUEF), 1905, T., 1487; P., 209.
density, magnetic rotation, and refractive power of (PERKIN), 1905, T., 1491.
- 1:1-Dimethyl- Δ^3 -cyclohexene**, amino-5-imino-, additive salts of (HAAS), 1906, T., 194.
- 1:1-Dimethyl- Δ^5 -cyclohexene**, 3:5-dichloro-2:4:5-tribromo- formation of, and its reactions (CROSSLEY), 1904, T., 266; P., 21.
- 1:3-Dimethyl- Δ^4 -cyclohexene**, hydrochloride of (AUWERS and PETERS), 1910, A., i, 827.
- 1:4-Dimethyl- Δ^3 -cyclohexene** and its dibromide (ZELINSKY and GORSKY), 1908, A., i, 722.
- Dimethylcyclohexenes**, 1:2-, and 1:3-, the dibromide of the latter (ZELINSKY and GORSKY), 1908, A., i, 722.
- 1:2-, 1:3-, and 1:4- (SABATIER and MAILHE), 1905, A., i, 588.
- 1:3-Dimethyl- Δ^4 -cyclohexene-5-acetic acid** (AUWERS and PETERS), 1910, A., i, 842.
- 1:4-Dimethyl- Δ^1 -cyclohexene-2-carboxylic acid**, 3-chloro- (AUWERS and HESSENLAND), 1908, A., i, 551.
- 2:6-Dimethylcyclo- Δ^4 -hexene-1-carboxylic acid** and its ethyl ester (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 412.
- Dimethylcyclohexene oxide** and its derivatives (PRIESCHAEFF), 1911, A., i, 255.
- 1:3-Dimethyl- Δ^3 -cyclohexene-5-trimethylcarbinol** (AUWERS and PETERS), 1910, A., i, 842.
- $\beta\delta$ -Dimethyl- Δ^{α} -hexenoic acid**, γ -hydroxy-, barium, and silver salts, and lactone (RUPE and LOTZ), 1909, A., i, 928.
- $\beta\delta$ -Dimethyl- Δ^{β} -hexenoic acid** and its menthyl ester and cadmium salt (RUPE and LOTZ), 1909, A., i, 928.
- $\gamma\epsilon$ -Dimethyl- Δ^{β} -hexen- δ -ol** and its acetate and chloride (ABELMANN), 1910, A., i, 455.
- 1:1-Dimethyl- Δ^2 -cyclohexen-3-ol**, 5-imino-, action of nitrous acid on (HAAS), 1907, T., 1444; P., 192.
- 1:1-Dimethyl- Δ^4 -cyclohexen-3-ol** (CROSSLEY and RENOUEF), 1908, T., 641.
- 1:3-Dimethyl- Δ^3 -cyclohexen-5-ol-5-acetic acid**, ethyl ester (AUWERS and PETERS), 1910, A., i, 841.
- 1:3-Dimethyl- Δ^2 -cyclohexen-1-ol-4:6-dione**, dioxide of, and its benzoyl derivatives and condensation products (BAMBERGER and RUDOLF), 1907, A., i, 608.
- bisphenylhydrazone of (BAMBERGER and REBER), 1907, A., i, 644.
- 1:3-Dimethyl- Δ^1 -cyclohexen-3-ol-6-one**, 4-hydroxylamino-, oxime of, and its derivatives (BAMBERGER and RUDOLF), 1907, A., i, 607.
- 1:1-Dimethyl- Δ^4 -cyclohexen-3-one** (3-keto-1:1-dimethyl- Δ^4 -tetrahydrobenzene) and its oxidation and its oxime and semicarbazone (CROSSLEY and RENOUEF), 1906, P., 303; 1907, T., 78.
- 1:1-Dimethyl- Δ^4 -cyclohexen-3-one**, 5-bromo- and 5-chloro-, and their semicarbazones (CROSSLEY and LE SUEUR), 1903, T., 111.
- 4:5-di-, 2:4:5-tri-, and 2:2:4:5-tetra-bromo- (CROSSLEY and LE SUEUR), 1903, T., 114.
- 5-chloro-, interaction of ethyl cyanoacetate and (CROSSLEY and GILLING), 1910, T., 518; P., 53.
- action of reducing agents on (CROSSLEY and RENOUEF), 1906, P., 302; 1907, T., 63.
- condensation of, with ammonia, aniline, and *p*-toluidine (HAAS), 1906, T., 187; P., 17.
- condensation of, with *m*- and *p*-phenylenediamines (HAAS), 1906, T., 387; P., 63.
- interactions of, with sodium ethoxide, ethyl malonate, ethyl methylmalonate, and ethyl ethylmalonate (CROSSLEY and GILLING), 1909, T., 23.
- 1:1-Dimethyl- Δ^3 -cyclohexen-5-one**, 3-amino-, *N*-acetyl derivative of, and its semicarbazone (HAAS), 1906, T., 193.
- 1:1-Dimethyl- Δ^4 -cyclohexen-3-one-5-acetic acid**, ethyl ester, and its hydrolysis and its semicarbazone (CROSSLEY and GILLING), 1908, P., 130; 1909, T., 23.
- α -1:1-Dimethyl- Δ^4 -cyclohexen-3-one-5-butyric acid**, ethyl ester, and its hydrolysis (CROSSLEY and GILLING), 1909, T., 28.
- Dimethylcyclohexenonecarboxylic acid**, ethyl ester, oxime of, and its hydrochloride, and amino-, ethyl ester, and its derivatives (SKITA), 1907, A., i, 1041.
- 2:6-Dimethyl- Δ^2 -cyclohexen-4-one-1-carboxylic acid**, ethyl ester (MÉRLING, WELDE, and SKITA), 1905, A., i, 350.

- 1:3-Dimethyl- Δ^6 -hexen-5-one-*m*-nitrophenylhydrazon \bar{e} (BORSCHÉ, WITTE, and BOTHE), 1908, A., i, 367.
- 1:3-Dimethyl- Δ^3 -cyclohexen-5-one-6-oxalic acid and its ethyl ester (RUHEMANN), 1912, T., 1734.
- α -1:1-Dimethyl- Δ^4 -cyclohexen-3-one-5-propionic acid, ethyl ester, and its hydrolysis (CROSSLEY and GILLING), 1909, T., 28.
- 1:3-Dimethyl- Δ^3 -cyclohexenylidene-5-acetic acid, ethyl ester (AUWERS and PETERS), 1910, A., i, 841.
- 1:5-Dimethylcyclohexenylidene-3-cyanoacetic acid, ethyl ester (KNOEVENAGEL and MOTTEK), 1905, A., i, 62.
- 1:1-Dimethyl- Δ^3 -cyclohexenylidene-5-cyanoacetic acid, 3-hydroxy-, ethyl ester and silver salt of (CROSSLEY and GILLING), 1910, T., 527.
- 1:4-Dimethylcyclohexenyl (tetrahydro-*p*-xylyl) methyl ketone and its oxime (BLANC), 1909, A., i, 101.
- β -Dimethyl- Δ - γ -hexinene- β -diol and its derivatives (DUPONT), 1911, A., i, 173, 554.
- β -Dimethylhexoic acid and its menthyl ester (RUPE and LOTZ), 1909, A., i, 928.
- β -Dimethylhexoic acid, β -hydroxy-, and its salts (MARKO), 1904, A., i, 642.
- γ -Dimethylhexoic acid, β -hydroxy-, and its salts (BRAUN and KITTEL), 1907, A., i, 17.
- Dimethyl-*n*-hexylamine and its salts (v. BRAUN), 1911, A., i, 611.
- Di-1-methylcyclohexyl-3-amine (WALLACH), 1906, A., i, 161.
- Dimethylcyclohexylamines, α - and β -, and their derivatives (WALLACH, HÜTTNER, and ALTENBURG), 1906, A., i, 514.
- β -Dimethylhexylene β -glycol, dimethyl ether of (ISTOMIN), 1905, A., i, 165.
- β -Dimethyl- Δ -hexylen- β -ol and its chloride (HENRY), 1906, A., i, 922.
- 1:4'-Dimethyl-3-cyclohexylidenecyclohexan-4-one, and its oxime (LUFF and PERKIN), 1910, T., 2155.
- Dimethylhomocatechol. See Homocatechol dimethyl ether.
- Dimethylhomophthalide (BAUER and WÖLZ), 1911, A., i, 872.
- α -5-Dimethylhydantoin (GABRIEL), 1906, A., i, 635.
- 1:3-Dimethylhydantoin (BILTZ and HEYN), 1912, A., i, 590.
- 5:5-Dimethylhydantoin, 4-imino- (PILOTY and VOGEL), 1903, A., i, 524.
- 5:5-Dimethylhydantoin, 2:4-diimino-1-hydroxy-, and the action of hydrazine hydrate on (PILOTY and VOGEL), 1903, A., i, 523.
- 1:3-Dimethylhydantoin-5-carboxylic acid, 5-hydroxy-, lactamide (BILTZ and KREBS), 1910, A., i, 522.
- 1:3-Dimethylhydantoin-5-carbureide, 5-hydroxy- (BILTZ and KREBS), 1910, A., i, 521.
- 1:3-Dimethylhydantoinamide, and its ethyl ether and diacetyl derivative (BILTZ and KREBS), 1910, A., i, 521.
- 1:3-Dimethylhydantoincarbamide, 5-hydroxy- (BILTZ and KREBS), 1910, A., i, 521.
- $\alpha\alpha$ -Dimethylhydracrylonitrile and its acetate (BÖHM), 1907, A., i, 16.
- s*-Dimethylhydrazine and its additive salts and diacyl derivatives (KNORR and KÖHLER), 1906, A., i, 817; (KNORR), 1906, A., i, 893.
- Dimethylhydrazinium cyanide (PETERS), 1906, A., i, 817.
- 2:2-Dimethyl-1-hydrindone, and its semicarbazone (HALLER and BAUER), 1910, A., i, 490.
- 2:4, and 3:4-Dimethyl-1-hydrindones, 7-hydroxy-, and their derivatives (AUWERS), 1912, A., i, 107.
- Di-*m*-methylhydrobenzoin, di-*o*-hydroxy-, diesoanhydride of (ANSELMINO), 1908, A., i, 259.
- β :4-Dimethyl-*o*-hydrocoumaric acid (FRIES and FICKEWIRTH), 1908, A., i, 824.
- 2:5-Dimethylhydrocoumarilic acid (FRIES and FICKEWIRTH), 1908, A., i, 825.
- 3-[2:4-Dimethylhydrocoumarilyl]-4:6-dimethylcoumarin (FRIES and VOLK), 1911, A., i, 205.
- 3-[2:5-Dimethylhydrocoumarilyl]-4:7-dimethylcoumarin (FRIES and KLOSTERMANN), 1908, A., i, 822.
- 1-[2:5-Dimethylhydrocoumarilyl]-2:5-dimethylhydrocoumarone and its hydrobromide, oxime, and phenylhydrazone and its methoxy- and ethoxy-derivatives and its isomeride (FRIES and KLOSTERMANN), 1908, A., i, 822.
- 4:7-Dimethylhydrocoumarin (FRIES and FICKEWIRTH), 1908, A., i, 824.
- 2:5-Dimethylhydrocoumarone (FRIES and FICKEWIRTH), 1908, A., i, 825.
- Dimethylhydrofluoric acid (LAMBRECHT), 1909, A., i, 949.
- Dimethylhydropyrrindole (PILOTY), 1910, A., i, 277.

- 1:3-Dimethylhydrothymine**, 5-bromo-4-hydroxy- (JOHNSON and CLAPP), 1908, A., i, 836.
- 1:3-Dimethylhydrouracil**, 5-dibromo-4-hydroxy- (JOHNSON and CLAPP), 1908, A., i, 836.
- Dimethylhydrourushiol** (MAJIMA), 1912, A., i, 884.
- Dimethyl- β -hydroxyethylamine**, gold salt (EMMERT), 1912, A., i, 253.
- 1:3-Dimethyl-7- β -hydroxyethylxanthine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 475, 703.
- 3:7-Dimethyl-1- $\alpha\beta$ -dihydroxypropylxanthine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 475.
- 2:5-Dimethyl-8-hydroxy-1:2:3:4-tetrahydroacridine**, and its sulphate (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.
- Di-*C*-methyliminodipropionic acid**, diethyl ester and copper salt of (STADNIKOFF), 1909, A., i, 773.
- 3:3'-Dimethylindanthren** (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 142.
- Dimethylindazoles**, nitro-derivatives (NOELTING), 1904, A., i, 694.
- 1:1'-Dimethylindigotin** and 6:6'-dibromo-, and 5:5'-dichloro- (ETTINGER and FRIEDLÄNDER), 1912, A., i, 727.
- 3:3'-Dimethylindigotin**, 5:5'-dibromo-6:6'-diamino-, acetyl derivative (KUNCKELL and SCHNEIDER), 1912, A., i, 915.
- 4:4'-Dimethylindigotin**, 5:5'-dichloro- (KUNCKELL and LILLIG), 1912, A., i, 1027.
- 7:7'-Dimethylindigotin**, spectroscopic behaviour of (GRANDMOUGIN), 1909, A., i, 969.
- Dimethylindigotins**, *o*- and *p*- (SANDMEYER and CONZETTI), 1903, A., i, 487.
- 1:5-Dimethylindole** (v. BRAUN and KRUBER), 1912, A., i, 969.
- 2:3-Dimethylindole**, action of chloroform on (PLANCHER and CARRASCO), 1905, A., i, 298.
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- 2:4-Dimethylindole** (PLANCHER and CIUSA), 1907, A., i, 80.
- 2:5-Dimethylindole** (KÖNIG and BECKER), 1912, A., i, 496.
- 4:7-Dimethylindole**, synthesis of, and its 2-carboxylic acid (PLANCHER and CARAVAGGI), 1905, A., i, 298.
- 3:3-Dimethylindolenyl 2-methyl ketone**, and its semicarbazone (PLANCHER and GIUMELLI), 1910, A., i, 63.
- 3:3-Dimethylindolenyl 2-methyl ketoxime** and its acyl derivatives (PLANCHER and BONAVIA), 1903, A., i, 434.
- 2:3-Dimethylindoline** and its oxalate (CARRASCO), 1908, A., i, 913.
- 1:2- and 2:5-Dimethylindyl-3-benzoquinones** (MÖHLAU and REDLICH), 1912, A., i, 129.
- 2:5-Dimethylindyl-3-toluquinone** (MÖHLAU and REDLICH), 1912, A., i, 129.
- i*-Dimethylinositol**, presence of, in the latex of *Melaleuca* from Sumatra, and its tetra-acetyl derivative (DE JONG), 1908, A., i, 952.
- 2:6-Dimethyl-4-iodomethylpyridine-3:5-dicarboxylic acid**, ethyl ester (BENARY), 1911, A., i, 320.
- Dimethylisatins**, 4:6- and 5:7- and their phenylhydrazones (HELLER and LEYDEN), 1908, A., i, 218.
- 1:5-Dimethylisatin-*p*-toluidide** (ETTINGER and FRIEDLÄNDER), 1912, A., i, 728.
- $\alpha\gamma$ -Dimethylitaconic acid** (FICHTER and RUDIN), 1904, A., i, 473.
and its anhydride (FICHTER and SCHLAEFFER), 1906, A., i, 399.
- $\gamma\gamma$ -Dimethylitaconic acid**, oxidation of (FITTIG and SCHWÄRTZLIN), 1904, A., i, 553.
- Dimethylketen** and its reactions (STAUDINGER and KLEVER), 1906, A., i, 234; 1907, A., i, 424.
- Dimethylketen- β -naphthaquinoline** (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.
- Dimethylketen-isoquinoline** (STAUDINGER, KLEVER, and KOBER), 1910, A., i, 587.
- Dimethylketentriethylum** (WEDEKIND and MILLER), 1909, A., i, 459.
- Dimethylketol**. See Acetylmethylcarbinol.
- $\alpha\alpha$ -Dimethyl-lævulic acid** (*mesitonic acid*), preparation of, and its oxime, phenylhydrazone, and semicarbazone (LAPWORTH), 1904, T., 1219; P., 177.
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- $\alpha\beta$ -Dimethyl-lævulic acid** and its derivatives (WILLSTÄTTER and BROSSA), 1911, A., i, 707.
- $\alpha\alpha$ -Dimethyl-lævalonitrilecyanohydrin** and its hydrolysis (LAPWORTH), 1904, T., 1223.

- $\alpha\alpha$ -Dimethyl-lauric acid and its amide** (HALLER and BAUER), 1909, A., i, 655.
- 5:5'-Dimethyl-leuco-oxindirubin (2:1'-dihydroxy-5:5'-dimethyl-1:2'-dicoumarone)** (FRIES and PFAFFENDORFF), 1910, A., i, 186.
derivatives of (FRIES and PFAFFENDORFF), 1911, A., i, 150.
- $\alpha\alpha$ -Dimethyl-leucothionine and its hydrochloride** (GNEHM and KAUFLE), 1906, A., i, 389.
- dl*-N-Dimethyl-leucylglycine and its copper salt** (FISCHER and GLUUD), 1909, A., i, 887.
- Dimethylmaleic anhydride**, action of ammonia on (ROSSI), 1906, A., i, 138.
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- $\alpha\alpha$ -Dimethylmalic acid**, ethyl ester, and its nitrate (RASSOW and BAUER), 1909, A., i, 632.
- Dimethylmalonamic acid**, methyl ester and its calcium salt (PERKIN), 1903, T., 1221.
- Dimethylmalonamide** (PERKIN), 1903, T., 1221.
- Dimethylmalonanilic acid**, and *p*-chloro-, methyl esters (PERKIN), 1903, T., 1222.
- Dimethylmalonic acid and its amide** (MEYER), 1906, A., i, 137.
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s-phenylmethylhydrazide, and its salts (MICHAELIS and SCHENK), 1909, A., ii, 58.
- Dimethylmalonic anhydride and semichloride** (STAUDINGER and OTT), 1908, A., i, 603.
- Dimethylmalonylantipyrine**. See 1-Phenyl-2:4:4-trimethyl-3:5-pyrazolidone.
- 5:5-Dimethylmalonylguanidine** (MERCK), 1905, A., i, 751.
- Dimethylmalonylmalonamide** (REMFRY), 1911, T., 616.
- Dimethylmalonylmethylmalonamide** (REMFRY), 1911, T., 617.
- Dimethylmalonylphenylguanidine** (EINHORN), 1906, A., i, 538; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 987.
- Dimethylmandelic acids**, 2:4- and 3:4- (GATTERMANN), 1906, A., i, 591.
- Dimethylmesidine** (BAMBERGER and RUDOLF), 1907, A., i, 122.
- Dimethylmesityl oxide** (TRAUBE), 1909, A., i, 773.
- Dimethyl-*p*-methoxyprotonium perchlorate** (v. BAAYER), 1910, A., i, 763.
- Dimethyl- α -methylallylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 822.
- $\alpha\alpha$ -Dimethyl- α' -methylidiglycollic acid and its ethyl ester, diamide, and anhydride** (JUNGFLEISCH and GODCHOT), 1908, A., i, 128.
- 2:3-Dimethyl-4-methylene-1:4-benzopyranol**, 7-mono- and isomeric dihydroxy-, and their acetyl derivatives (BÜLOW and DEIGLMAYR), 1904, A., i, 609.
- 1:1-Dimethyl-2-methylene-3-cyclobutanone and its semicarbazone** (LEBEDEFF), 1911, A., i, 775.
- $\alpha\alpha$ -Dimethyl- β -methylenebutyrolactone** (NOYES), 1905, A., i, 322.
- 1:4-Dimethyl-5-methylenedihydrouracil**, 4-bromo- (BREMER), 1911, A., i, 161.
- Dimethyl-3-methylenedi-indole** (VOISENET), 1909, A., i, 607.
- Dimethylmethylenediroindole** (VOISENET), 1909, A., i, 607.
- $\beta\zeta$ -Dimethyl- δ -methylene- $\beta\epsilon$ -heptadiene** (v. FELLEBERG), 1904, A., i, 961.
- 1:1-Dimethyl-4-methylenecyclo- $\Delta^{2:5}$ -hexadiene** (AUWERS and MÜLLER), 1911, A., i, 621.
- 1:3-Dimethyl-5-methylene- Δ^3 -cyclohexene** (AUWERS and PETERS), 1910, A., i, 826.
- 3:3-Dimethyl-2-methylene- α -naphthindoline and its picrate, stanni- and mercuri-chlorides** (ZANGERLE), 1910, A., i, 430.
- $\beta\delta$ -Dimethyl- γ -methylenepentane** (CLARKE and JONES), 1912, A., i, 150.
- 1:1-Dimethyl-3-methylenephthalan** (SHIBATA), 1909, T., 1453; P., 209.
- Dimethylmethylenecyclopropane**, reduction of (ZELINSKY), 1908, A., i, 15.
- 1:1-Dimethyl-2-methylene-3-isopropenylcyclobutane** (LEBEDEFF), 1911, A., i, 775.
- Dimethylmethylenetrimethylene**. See β -Propylenecyclopropane.
- α - and β -Dimethylmorphimethine and their methiodides** (PSCHORR, DICKHÄUSER, and D'AVIS), 1911, A., i, 908.
- γ -, δ -, and ϵ -Dimethylmorphimethine methiodides** (PSCHORR, DICKHÄUSER, and D'AVIS), 1911, A., i, 908.
- Dimethylapomorphine and its salts** (PSCHORR, JAECKEL, and FECHT), 1903, A., i, 194.
- Dimethylmorphole**. See 3:4-Dimethoxyphenanthrene.

- Dimethylnaphthacenequinone**, *tetrahydroxy-(dihydroxydimethylisoethine-diphthalide)* (LIEBERMANN and VOSWINCKEL), 1904, A., i, 903.
- Dimethylnaphthacridines** (SENIER and COMPTON), 1909, T., 1623; P., 220.
- 2:8-Dimethyl-(1:5)-naphthadiquinoline** and its picate (FINGER and SPITZ), 1909, A., i, 524.
- 2:8-Dimethyl-(1:5)-naphthadiquinoline**, 4:10-hydroxy-, and its diacetyl derivative (FINGER and SPITZ), 1909, A., i, 523.
- 1:4-Dimethyl-2-naphthaquinol**, action of nitrous acid on (BARGELINI), 1907, A., i, 862.
- Dimethylnaphtha- ψ -quinol** (BARGELINI), 1907, A., i, 863.
- Dimethylnaphthaquinonitrole** (BARGELINI), 1907, A., i, 863.
- 3-Dimethylnaphthasafranine** and its reactions and salts (FISCHER and HEPP), 1903, A., i, 59.
- 2:8-Dimethyl-1:3:7:9-naphthatetrazine**, 4:6-di-hydroxy- (BOGERT and KROPFF), 1909, A., i, 844.
- Dimethylnaphtheurhodine**, change of the colour of fluorescence of, with the solvent (LEY and v. ENGELHARDT), 1908, A., ii, 746.
- 3:3-Dimethyl- α - and - β -naphthindolinones** and their methyl ethers and acetyl derivatives (LIEBER), 1908, A., i, 682.
- Dimethyl- α -naphthoamide** (v. BRAUN), 1904, A., i, 689.
- 1:4-Dimethyl-8-naphthol** from a derivative of artemisin (BERTOLO), 1905, A., i, 224.
- N-Dimethyl- β -naphthylamine-8-sulphonic acid** and its potassium salt (SMITH), 1906, T., 1507; P., 236.
- Dimethylnaphthylazocarbonamide** (BARGELINI), 1907, A., i, 863.
- 2:6-Dimethylnicotinic acid**, 4-chloro-, and 4-iodo-, ethyl esters, methiodides of (MICHAELIS), 1909, A., i, 528.
- 2:4-Di(methylnitroamino)toluene**, 3:5-dinitro- (BLANKSMA), 1911, A., i, 39.
- 2:5-Di(methylnitroamino)toluene**, 2:4:6-trinitro- (BLANKSMA), 1904, A., i, 566.
- $\delta\delta$ -Dimethyl- $\Delta^{\gamma\epsilon}$ -nonadiene** (BJELOUSS), 1910, A., i, 706.
- β -Dimethylnonane**, β -dibromo- (v. BRAUN and SOBECKI), 1911, A., i, 701.
- 1:3-Dimethyldicyclo-[1:3:3]-nonane**, -nonan-5-ol-7-one and its oximes and amines, and -nonane-5:7-diol (RABE and JAHR), 1908, A., i, 554.
- $\beta\zeta$ -Dimethyl-nonane- $\beta\theta$ -diol** and - $\Delta\alpha$ -nonen $\alpha\theta$ -ol and its acetate and its oxime and semicarbazone (RUPE, PFEIFFER, and SPLITTGERBER), 1907, A., i, 712.
- β -Dimethylnonane- β -diol** (v. BRAUN and SOBECKI), 1911, A., i, 701.
- $\beta\zeta$ -Dimethylnonan- ϵ -ol** and its phenylurethane (BJELOUSS), 1912, A., i, 229.
- $\delta\theta$ -Dimethyl- Δ^{δ} -nonene** (BJELOUSS), 1912, A., i, 230.
- $\delta\theta$ -Dimethyl- Δ^{γ} -nonen- ϵ -ol**, and its acetate and chloride (BJELOUSS), 1910, A., i, 706.
- $\beta\zeta$ -Dimethyl- $\Delta\alpha$ -nonen- θ -one**. See Methyl nonyl ketone.
- $\alpha\alpha$ -Dimethyl- Δ^{β} -nonenyl alcohol** (HARDING, WALSH, and WEIZMANN), 1911, T., 450.
- Dimethylnonylcarbinol**. See Dodecyl alcohol.
- Dimethylnorcampholide**, synthesis of (KOMPPA and HINTIKKA), 1909, A., i, 301.
- 2:5-Dimethyl- $\Delta^{2:4}$ -norcaradiene-7-carboxylamide** (BUCHNER and SCHULZE), 1911, A., i, 51.
- 3:5-Dimethyl- $\Delta^{2:4}$ -norcaradiene-7-carboxylamide** (BUCHNER and DELBRÜCK), 1908, A., i, 87.
- 2:5-Dimethyl- $\Delta^{2:4}$ -norcaradienenecarboxylic acid**, ethyl ester (BUCHNER and SCHULZE), 1911, A., i, 50.
- $\gamma\eta$ -Dimethyl- $\Delta^{\beta\delta}$ -octadiene** and its dihydrobromide (ABELMANN), 1910, A., i, 455.
- $\beta\epsilon$ -Dimethyl- $\Delta^{\gamma\epsilon}$ -octadiene** (BJELOUSS), 1910, A., i, 706.
- 1:5-Dimethylcycloocta- $\Delta^{1:5}$ -diene** and its ozonides (HARRIES), 1906, A., i, 30.
- $\gamma\eta$ -Dimethylocta- $\Delta^{\beta\eta}$ -dien- Δ^{δ} -inene** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 329.
- $\gamma\eta$ -Dimethyl- $\Delta^{\alpha\eta}$ -octadienylbenzene** and its dichloride and tetrabromide (KLAGES and SAUTTER), 1906, A., i, 489.
- $\beta\eta$ -Dimethyloctane**, action of nitric acid on, and its amino-derivatives and their salts and dibenzoyl derivative (KONOWALOFF), 1907, A., i, 2.
- $\beta\zeta$ -Dimethyloctane** (WILSTÄTTER and MAYER), 1908, A., i, 383; (ENKLAAR), 1908, A., i, 664, 934.
- $\beta\zeta$ -Dimethyloctane- $\gamma\theta$ -diol**, preparation of (SEMMLER), 1906, A., i, 785.
- $\beta\zeta$ -Dimethyloctane- $\gamma\eta$ -dione- α -ol** and its semicarbazone (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 102.

- $\beta\epsilon$ -Dimethyloctan- δ -ol** and its phenylurethane (BJELOUSS), 1912, A., i, 229.
- $\beta\zeta$ -Dimethyloctan- ζ -ol.** See Tetrahydrolinalool.
- $\beta\zeta$ -Dimethyloctan- ϵ -onoic acid**, oxime, *p*-nitrophenylhydrazone, and semicarbazone of (CLARKE, LAPWORTH, and WECHSLER), 1908, T., 37.
- $\beta\zeta$ -Dimethyl- Δ^{α} -octene** (WOLFF and THIELEPAPE), 1912, A., i, 989.
- $\beta\epsilon$ -Dimethyl- Δ^{δ} -octene** (BJELOUSS), 1912, A., i, 230.
- $\beta\zeta$ -Dimethyl- Δ^{α} -octene- $\gamma\gamma$ -dione**, and its semicarbazone (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 114.
- $\beta\zeta$ -Dimethyl- Δ^{δ} -octen- ζ -ol** (ENKLAAR), 1908, A., i, 934.
- $\gamma\eta$ -Dimethyl- Δ^{δ} -octen- δ -ol** (ABELMANN), 1908, A., i, 2.
and its acetate and chloride (ABELMANN), 1910, A., i, 455.
- $\delta\eta$ -Dimethyl- Δ^{δ} -octen- δ -ol** (GRY), 1908, A., i, 307.
- $\delta\eta$ -Dimethyl- $\Delta\gamma$ -octen- ϵ -ol**, and its acetate and chloride (BJELOUSS), 1910, A., i, 706.
- $\gamma\eta$ -Dimethyl- $\Delta\gamma$ -octenylbenzene**, and α -hydroxy- (KLAGES and SAUTTER), 1906, A., i, 489.
- $\gamma\eta$ -Dimethyl- Δ^{δ} -octinene- $\gamma\eta$ -diol** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 329.
- $\beta\zeta$ -Dimethyloctoic acid**, derivatives of (WALLACH and BEHNKE), 1912, A., i, 570.
- $\beta\zeta$ -Dimethyl-octoic acid**, β -hydroxy-, and - Δ^{α} -octenoic acid, ethyl esters (BOUVEAULT and BLANC), 1905, A., i, 12.
- $\gamma\eta$ -Dimethyloctyl alcohol** (BOUVEAULT and BLANC), 1905, A., i, 12; (WALLACH and BEHNKE), 1912, A., i, 570.
- Dimethyl-*n*-octylamine** and its salts (v. BRAUN), 1911, A., i, 612.
- $\gamma\eta$ -Dimethyloctylamine** and its derivatives (WALLACH and BEHNKE), 1912, A., i, 570.
- $\gamma\eta$ -Dimethyloctylbenzene** and its sulphonic acid (KLAGES and SAUTTER), 1906, A., i, 490.
- Dimethylolacetophenone** (VAN MARLE and TOLLENS), 1903, A., i, 494.
- Dimethylolcarbamide** (EINHORN and HAMBURGER), 1908, A., i, 142.
- 2:6-Dimethylol-*p*-cresol** (AUWERS), 1907, A., i, 612.
- Dimethyloldimethylenetrisacetylacetone** (KNOEVENAGEL), 1903, A., i, 639.
- Dimethylolivil** and its derivatives (KÖRNER and VANZETTI), 1912, A., i, 352.
- Dimethylisoolivil** (KÖRNER and VANZETTI), 1912, A., i, 353.
- Dimethylolmethylenebisacetylacetone** and its dioxime (KNOEVENAGEL), 1903, A., i, 639.
- Dimethylol-2-picoline.** See 2-isoPropylpyridine, $\alpha\gamma$ -dihydroxy-.
- Dimethylloxalacetic acid.** See Oxalylisobutyric acid.
- s*-Dimethyloxamide**, *N*-dibromo- and *N*-dichloro- (CHATTAWAY and LEWIS), 1906, T., 160; P., 18.
- 2:5-Dimethylloxazole** (GABRIEL), 1910, A., i, 432.
- 5:5'-Dimethylloxindirubin** (1:2'-bis(5-methylcoumaran)-indigo) (FRIES and PFAFFENDORFF), 1910, A., i, 186.
- Dimethylpapaveroline** and its salts (PICKET and KRAMERS), 1903, A., i, 358.
- $\alpha\gamma$ -Dimethylparaconic acid** and its ethyl ester and silver salt (FICHTER and RUDIN), 1904, A., i, 473.
- $\beta\gamma$ -Dimethylparaconic acid** and its ethyl ester (FICHTER and GISIGER), 1910, A., i, 88.
- $\beta\delta$ -Dimethyl- $\Delta\alpha\gamma$ -pentadiene** (v. FELLENBERG), 1904, A., i, 961.
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- $\beta\delta$ -Dimethyl- $\Delta\beta\gamma$ -pentadiene**, dipolymeride of (LEMAIRE), 1909, A., i, 200.
- 2:2-Dimethylcyclopentadiene-1:3-dicarboxylic acid** (KOMPPA), 1909, A., i, 726.
- Dimethylpentaglycerol.** See γ -Methyl- $\beta\delta$ -dimethylol- α -butanol.
- Dimethylpentamethylene oxide** (FRANKE and KOHN), 1907, A., i, 816.
- Dimethylpentamethylenecarboxylic acid.** See Dimethylcyclopentanecarboxylic acid.
- Dimethylpentamethylenediamine**, benzoyl derivative, and its picrate (v. BRAUN), 1910, A., i, 820.
- as*-Dimethylpentamethylenediamine** and its aurichloride (v. BRAUN), 1910, A., i, 820.
- $\beta\delta$ -Dimethylpentane** (CHONIN), 1905, A., i, 729.
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nitration of, and its amine (KONOWALOFF), 1908, A., i, 241.
- $\beta\delta$ -Dimethylpentane, β -chloro-** (SCHREINER), 1910, A., i, 661.
- 1:1-Dimethylcyclopentane** (KIJNER), 1905, A., i, 772.
and 2-bromo- and 2-iodo- (KIJNER), 1908, A., i, 865.

- 1:2-Dimethylcyclopentane** (KIJNER), 1908, A., i, 865.
- 1:1-Dimethylcyclopentane-2-carboxylic acid, 5-bromo-** (PERKIN and THORPE), 1904, T., 130.
- $\beta\beta$ -Dimethylpentane- $\alpha\gamma$ -diol** (FRANKE and KOHN), 1907, A., i, 171. and its acetate (LETELLIER), 1908, A., i, 242.
- $\beta\beta$ -Dimethylpentane- $\alpha\epsilon$ -diol** (BOUVE-AULT and BLANC), 1903, A., i, 731.
- $\beta\delta$ -Dimethylpentane- $\beta\gamma$ -diol**, and its acetyl derivative and phenylurethane (BLAISE and HERMAN), 1910, A., i, 534.
- $\beta\delta$ -Dimethylpentane- $\beta\delta$ -diol** (KOHN), 1907, A., i, 899. synthesis of (LEMAIRE), 1909, A., i, 199.
- Dimethylpentane- $\beta\delta$ -diols, $\beta\beta$ - and $\beta\delta$ -** (FRANKE and KOHN), 1905, A., i, 111.
- 1:1-Dimethylcyclopentane-3:4-dione and its osazone** (BLANC and THORPE), 1911, T., 2012.
- 1:1-Dimethylcyclopentane-3:4-dione-2:5-dicarboxylic acid, methyl ester, preparation of** (THORPE), 1909, P., 94.
- $\gamma\gamma$ -Dimethyl- $\beta\delta$ -pentanediureide** (DE HAAN), 1908, A., i, 578.
- $\beta\beta$ -Dimethylpentanetricarboxylic acid, ethyl ester** (BLANC), 1906, A., i, 399.
- $\beta\delta$ -Dimethylpentan- δ -ol, β -amino-, and its additive salts** (KOHN), 1907, A., i, 899.
- 1:1-Dimethylcyclopentane-2-ol** (KIJNER), 1911, A., i, 42.
- 1:1-Dimethylcyclopentane-2-ol-3-acetic acid** (BLANC), 1908, A., i, 171.
- 2:4-Dimethylcyclopentane-2-olacetic acid, lactone of** (BLANC), 1908, A., i, 20.
- trans*-1:1-Dimethylcyclopentane-5-ol-2-carboxylic acid** (PERKIN and THORPE), 1904, T., 130.
- $\beta\beta$ -Dimethylpentan- γ -one oxime** (HALLER and BAUER), 1910, A., i, 219.
- 1:1-Dimethylcyclopentane-2-one and its oxime and 4-benzylidene derivative** (BLANC), 1908, A., i, 655. and its semicarbazone (BLANC), 1909, A., i, 523. derivatives of (KIJNER), 1911, A., i, 43.
- 1:1-Dimethylcyclopentane-3-one and its semicarbazone** (BLANC), 1908, A., i, 655.
- 1:3-Dimethylcyclopentane-2-one, 2-cyano-, and their semicarbazones** (BEST and THORPE), 1909, T., 705; P., 93.
- 1:1-Dimethylcyclopentane-2-one-3-acetic acid and its esters, oxime, and semicarbazone** (BLANC), 1908, A., i, 171.
- 1:1-Dimethylcyclopentane-2-one-5-carboxylic acid and its ethyl ester, oxime, and semicarbazone** (PERKIN and THORPE), 1903, P., 61; 1904, T., 138.
- 1:3-Dimethylcyclopentane-2-one-1-carboxylic acid, 3-cyano-, ethyl ester, and its semicarbazone** (BEST and THORPE), 1909, T., 705; P., 93.
- Dimethylpentanoneol. See γ -Keto- $\alpha\beta\beta$ -trimethylbutyl alcohol.**
- $\beta\delta$ -Dimethyl- $\Delta\gamma$ -pentene, β -hydroxy-** (v. FELLEBERG), 1904, A., i, 961.
- 1:1-Dimethyl- Δ^2 -cyclopentene, formation and reduction of** (KIJNER), 1908, A., i, 865.
- 1:2-Dimethyl- Δ^1 -cyclopentene, formation, structure, and oxidation of** (KIJNER), 1908, A., i, 530, 865.
- 2:2-Dimethylcyclopentene-1-carboxylic acid** (PERKIN and THORPE), 1904, T., 131.
- 2:2-Dimethyl- Δ^4 -cyclopentene-1:3-dicarboxylic (isodehydroapocamphoric) acid and its anhydride** (KOMPPA), 1909, A., i, 726.
- 2:2-Dimethyl- Δ^5 -cyclopentene-1:3-dicarboxylic acid (dehydroapocamphoric acid)** (KOMPPA), 1909, A., i, 726.
- aa*-Dimethyl- $\Delta\beta$ -pentenoic acid (crotonyl-dimethylacetic acid)** (PERKIN and SMITH), 1904, T., 156. and its ethyl ester, salts, amide, anilide, benzylamide, chloride and phenylhydrazide (COURTOT), 1906, A., i, 396.
- aa*-Dimethyl- $\Delta\gamma$ -pentenoic acid (β -vinylpiralic acid), β -hydroxy-, and its ethyl ester, salts, dibromide, and phenylurethanes** (BLAISE and COURTOT), 1906, A., i, 553.
- $\beta\beta$ -Dimethyl- $\Delta\gamma$ -pentenoic acid and its ethyl ester and amide** (BLANC), 1907, A., i, 764.
- $\beta\delta$ -Dimethyl- Δ^a -penten- γ -ol and its acetyl derivative** (UMNOVA), 1911, A., i, 249.
- $\beta\delta$ -Dimethyl- Δ^a -penten- δ -ol and its acetate and bromine additive derivative** (FRANKE and KOHN), 1907, A., i, 816.
- $\beta\beta$ -Dimethyl- $\Delta\gamma$ -pentenol and its acetate** (COURTOT), 1906, A., i, 396.
- Dimethylpentenylamine and its methiodide** (v. BRAUN), 1912, A., i, 166.
- $\gamma\gamma$ -Dimethyl- α -pentinoic acid. See Heptinoic acid.**

- $\beta\beta$ -Dimethylpentylamine** hydrochloride and platinichloride (CHONIN), 1909, A., i, 450.
- 2:7-Dimethylphenanthraquinone** and its diacetyl derivative (LIEBERMANN), 1911, A., i, 656.
- 4:5-Dimethylphenanthraquinone** (MAYER), 1912, A., i, 478.
- 2:7-Dimethylphenanthraquinoneoxime** (LIEBERMANN and KARDOS), 1912, A., i, 465.
- 9:10-Dimethylphenanthrene** (ZINCKE and TRÖPP), 1908, A., i, 787.
- 2:7-Dimethylphenanthrene-9:10-diol** (LIEBERMANN and KARDOS), 1912, A., i, 465.
- 9:10-Dimethylphenanthridine**, and its picrate (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.
- 4:7-Dimethyl- ψ -phenanthroline-3:8-dione** (KAUFMANN, RADOŠEVIĆ, HÜSSY, and DAMJE), 1909, A., i, 608.
- 2:3-Dimethylphenazine** (DIEPOLDER), 1909, A., i, 787.
- 2:7-Dimethylphenazine** and its 5:10-oxide and their salts (HAMBERGER and HAM), 1911, A., i, 686.
- 4:9-Dimethylphenazine-2:7-bisarsinic acid** (BARROWCLIFF, PYMAN, and REMFRY), 1908, T., 1901.
- Dimethyl-*o*-phenetidine** (REVERDIN and LIEBL), 1912, A., i, 440.
- 1:2-Dimethylisopheno-1:3:4-diazosulphonine** (EKBOM), 1903, A., i, 411.
- 9:10-Dimethylpheno-**
 $\begin{array}{c} \text{N-}\alpha \\ \text{CH-}\beta \end{array}$ **-naphthacridine** and its aurichloride, platinichloride, and salicylate (SENIER and COMPTON), 1909, T., 1627; P., 220.
- 9:10-Dimethylpheno-**
 $\begin{array}{c} \text{N-}\beta \\ \text{CH-}\alpha \end{array}$ **-naphthacridine** and its aurichloride, platinichloride, and salicylate (SENIER and COMPTON), 1909, T., 1628; P., 220.
- Dimethylpheno-**
 $\begin{array}{c} \text{N-}\alpha \quad \text{N-}\beta \\ \text{CH}\beta \quad \text{CH}\alpha \end{array}$ **- and -naphthacridines**, 8:11- and 9:11-, and their platinichlorides (SENIER and COMPTON), 1907, T., 1935; P., 248.
- Dimethylphenopyrones.** See Dimethylxanthones.
- 3:9-Dimethylphenothiazine** and its salts (KEHRMANN and MODEBADŽE), 1906, A., i, 306.
- 2:7-Dimethylphenothiozin** and its oxides (HILDITCH and SMILES), 1911, T., 412.
- 2:7-Dimethylphenothioxonium** hydr-oxide and its picrate and platinichloride (HILDITCH and SMILES), 1911, T., 981.
- Dimethylphenoxyacetic acids**, 2:4-, 2:5-, and 3:4-, and their salts and anilides (JANDOLO), 1909, A., i, 101.
- Dimethyl-*o*-phenoxybenzoic acids**, 3:2'- and 5:4'- (FOSSE and ROBYN), 1904, A., i, 318.
- α -2:4- and α -3:4-Dimethylphenoxycinamic acids** (JANDOLO), 1909, A., i, 101.
- Dimethylphenoxyethylcarbinol** and its phenylurethane (STOERMER, SCHENCK ZU SCHWEINSBERG, SILBERN-SIBBERS, and RIEBEL), 1906, A., i, 582.
- Dimethylphenyl-**. See Xyl-yl.
- Dimethylphenylenediamine.** See Phenylenedimethyldiamine.
- Dimethylphloroglucinol**, trimethyl ether (HERZIG and WENZEL), 1903, A., i, 491.
- Dimethylphloroglucinolaldehyde.** See 3-Methylbenzaldehyde, 2:4:6-tri-hydroxy-.
- Dimethylphloroglucinolcarboxylic acid**, methyl ethers, and their esters (HERZIG and WENZEL), 1903, A., i, 491.
- Dimethylphloroglucinolphthalein** (LIEBERMANN and ZERNER), 1903, A., i, 488.
- Dimethylphthalan** (1:1-dimethyl-1:2-dihydroisobenzofuran, as-dimethyl-*o*-xylene oxide) (LUDWIG), 1907, A., i, 702.
- 1:3-Dimethylphthalan** (NELKEN and SIMONIS), 1908, A., i, 348.
- Dimethylphthalide** and nitro- (BAUER), 1904, A., i, 417.
- Dimethylphthalide**, 5-amino-, 5-cyano-, and 5-hydroxy-, and their derivatives (BARGELLINI and FORLI-FORTI), 1910, A., i, 745.
- Dimethylphthalidecarboxylic acid**, synthesis of (BARGELLINI; BARGELLINI and FORLI-FORTI), 1910, A., i, 744.
- Dimethylpicramic acid** (MELDOLA and HOLLELY), 1912, T., 923.
- Dimethylisopicramic acid** and its derivatives (MELDOLA and HOLLELY), 1912, T., 924.
- Dimethylpicrazide** (KNORR and KÖHLER), 1906, A., i, 817.
- $\alpha\delta$ -Dimethylpimelic acid** and ethyl ester and silver salt (KÖTZ), 1908, A., i, 24.
- $\beta\beta$ -Dimethylpimelic acid**, synthesis of (BLANC), 1906, A., i, 399.
- Dimethylpinylamine** and its hydrochloride (TILDEN and STOKES), 1905, T., 838; P., 183.

- 1:4-Dimethylpiperazine** (KNORR, HÖRLEIN, and ROTH), 1905, A., i, 834. and its additive salts (KNORR), 1904, A., i, 938.
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- α - and β -2:5-Dimethylpiperazines**, absence of optical activity of, and their salts (POPE and READ), 1912, T., 2325; P., 278.
- α - and β -2:5-Dimethylpiperazino-d-methylenecamphor** (POPE and READ), 1912, T., 2334.
- 2:4-Dimethylpiperidine** and its oxalate (WOHL and MAAG), 1911, A., i, 25.
- 2:4-Dimethylpiperidine**, 1-amino- (AHRENS and GORKOW), 1904, A., i, 616.
- 2:5-Dimethylpiperidine** and its salts (AHRENS and GORKOW), 1903, A., i, 515; 1904, A., i, 616.
- 4:4-Dimethylpiperidine** and its salts (KOMPPA), 1912, A., i, 580.
- Dimethylpiperidinium salts**, dicyano- (V. BRAUN), 1907, A., i, 899.
- 1:3-Dimethyl-8-piperidylmethylxanthine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 746.
- 4:4-Dimethylpiperidylphenylthiocarbamide** (KOMPPA), 1912, A., i, 580.
- $\beta\beta$ -Dimethylpivalic acid**. See $\alpha\alpha\beta$ -Trimethylbutyric acid.
- $\alpha\alpha$ -Dimethylpropaldehyde** (*trimethylacetaldehyde*) (SAMEC), 1907, A., i, 286.
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- $\beta\beta$ -Dimethylpropane** (*tetramethylmethane*), synthesis of (FERRARIO and FAGETTI), 1909, A., i, 77.
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- $\beta\beta$ -Dimethylpropane, s-tetrabromo-** (PERKIN and SIMONSEN), 1905, T., 857; P., 189.
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- 1:2-Dimethylcyclopropane** (ÖSTLING), 1911, P., 315; (ZELINSKY and UJEDINOFF), 1912, A., i, 17.
- 2:2-Dimethylcyclopropanecarboxylic acid** and its ethyl esters and amide (BLANC), 1907, A., i, 763.
- 1:2-Dimethylcyclopropane-1:2-dicarboxylic acid** (*1:2-dimethyltrimethylene-1:2-dicarboxylic acid*), chemical and physical properties of (HENSTOCK and WOOLLEY), 1907, T., 1954; P., 523.
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- $\beta\beta$ -Dimethylpropane- $\alpha\gamma$ -diol** (*dimethyltrimethylene glycol*), reduction of (MEYERSBERG), 1905, A., i, 166.
- $\beta\beta$ -Dimethylpropane- $\alpha\alpha\gamma\gamma$ -tetracarboxylic acid**, ethyl ester, and its α -bromo-derivative (KÖTZ), 1907, A., i, 707.
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- 3:3-Dimethylcyclopropanetetracarboxylic acid**, ethyl ester (KÖTZ), 1907, A., i, 707.
- $\alpha\beta$ -Dimethylpropanetricarboxylic acid** (*pentanetricarboxylic acid*) (THORPE and YOUNG), 1903, T., 358; P., 248.
- $\alpha\alpha$ -Dimethylpropenylacetic acid**. See $\alpha\alpha$ -Dimethyl- $\Delta\beta$ -pentenoic acid.
- $\alpha\alpha$ -Dimethylisopropenylacetic acid**. See $\alpha\alpha\beta$ -Trimethyl- $\Delta\beta$ -butenoic acid.
- 1:1-Dimethyl-3-isopropenyl-2-cyclobutanone** (LEBEDEFF), 1911, A., i, 776.
- Dimethylisopropenylcarbinol** and its phenylcarbamate (COURTOT), 1906, A., i, 925.
- $\alpha\alpha$ -Dimethylpropionic acid**. See Pivalic acid.
- $\alpha\alpha$ -Dimethylpropyl alcohol** (HENRY), 1907, A., i, 817.
- $\alpha\beta$ -Dimethylpropyl alcohol** (*methylisopropylcarbinol*) (FOURNEAU and TIFFENEAU), 1907, A., i, 818.
- $\beta\beta$ -Dimethylpropyl alcohol**, derivatives of (RICHARD), 1911, A., i, 6.
- $\alpha\alpha$ -Dimethyl- α -propylacetophenone** and its oxime (HALLER and BAUER), 1909, A., i, 109.
- $\alpha\alpha$ -Dimethyl- α -isopropylacetophenone** and its oxime (HALLER and BAUER), 1909, A., i, 654.
- Dimethylpropylamine**, γ -chloro- and its additive salts (KNORR and ROTH), 1906, A., i, 458.
- Dimethylpropyl-arsonium and -isoamyl-arsonium iodides** (DEHN and WILCOX), 1908, A., i, 722.
- $\alpha\beta$ -Dimethylpropylbenzene** (*sec.-isoamylbenzene* and its sulphonic acid (KLAGES), 1904, A., i, 28.
- Dimethylpropylisobutylammonium iodide** and platinichloride (POPE and READ), 1912, T., 528.
- $\alpha\beta$ -Dimethylpropylisobutyl ether**, β -chloro- (HENRY), 1907, A., i, 670.
- Dimethylisopropylcarbinol** (*tert.-pinacol alcohol*) (DELACRE), 1906, A., i, 784.
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- Dimethylisopropylcarbinol** (tert.-*pina-coyl alcohol*), formation of, in the hydrogenation of acetone (DENIGES), 1904, A., i, 706.
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- 2:2'-Dimethyl-5:5'-diisopropyl-4:4'-dibenzeneazoazoxybenzene** (BORSCHÉ and KÜHL), 1906, A., i, 321.
- $\delta\delta$ -Dimethyl- α -isopropyl-fulgenic acid and -fulgide** (STOBBE and LEUNER), 1905, A., i, 857.
- 1:3-Dimethyl-6-isopropylcyclohexan-1-ol.**
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- 1:1-Dimethyl-5-propyl- Δ^4 -cyclohexen-3-one** and its semicarbazone (CROSSLEY and GILLING), 1908, P., 130; 1909, T., 29.
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- $\beta\beta$ -Dimethylpropylideneaniline** (RICHARD), 1911, A., i, 7.
- 1:3-Dimethyl-5-isopropylidene- Δ^3 -cyclohexene** (AUWERS and PETERS), 1910, A., i, 826.
- 2-Dimethyl-4-isopropylidene-5-pyrrolidone** and its dibromide (PAULY and HÜLTENSCHMIDT), 1904, A., i, 88.
- $\beta\beta$ -Dimethylpropylmalonic acid, α -*di*-hydroxy-, lactic acid of, and its salts** (SILBERSTEIN), 1904, A., i, 289.
- 3:4-Dimethyl-2-isopropylcyclopentene-5-one-1-oxalic acid**, ethyl ester, and its semicarbazone (KÖTZ, BIEBER, and SCHÜLER), 1906, A., i, 668.
- 2:2-Dimethyl-6-isopropylpiperidone** (isobutylidenediacetoneamine) and its aurichloride and nitroso-derivative (KOHN and WENZEL), 1907, A., i, 238.
- 3:4-Dimethyl-5-propylpyrazole** and its 4-carboxylic acid, methyl ester (BOUVEAULT and BONGERT), 1903, A., i, 145.
- Dimethylpropylpyrone** and its isomeride (BAIN), 1906, T., 1234; P., 196.
- 2:5-Dimethyl-3-propylpyrrole** (KNORR and HESS), 1911, A., i, 1019.
- 3:6-Dimethyl-4-isopropyltetrahydro-1:3-oxazine** and its additive salts (KOHN), 1907, A., i, 679.
- 1:2-Dimethyl-4-isopropyltrimethylenimine** and its additive salts (KOHN), 1907, A., i, 680.
- 1:4-Dimethyl-3-propyluracil** (BÜCKENDORFF), 1912, A., i, 55.
- 3:4-Dimethyl-1-propyluracil** (BÜCKENDORFF), 1912, A., i, 55.
- 4:4'-Dimethylpyranthrene** (SCHOLL and POTSCHWAUSCHEG), 1910, A., i, 272.
- 4:4'-Dimethylpyranthrone**, preparation of (SCHOLL, LIESE, MICHELSON, and GRUNEWALD), 1910, A., i, 264; (SCHOLL and POTSCHWAUSCHEG), 1910, A., i, 272.
- 8:16'-Dimethylpyranthrone** (SCHOLL, POTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- 2:5-Dimethylpyrazine**, action of, on aldehydes (FRANKE), 1906, A., i, 47.
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- 2:3-Dimethylpyrazine-5-carboxylic acid** (GABRIEL and SONN), 1908, A., i, 60.
- 2:3-Dimethylpyrazine-5:6-dicarboxylic acid** and its salts (GABRIEL and SONN), 1908, A., i, 60.
- 1:3-Dimethylpyrazole**, preparation and properties of, and its salts and *di*-bromo-derivative (JOWETT and POTTER), 1903, T., 464; P., 56.
- 1:3-Dimethylpyrazole**, 5-chloro-, derivatives of (MICHAELIS and LACHWITZ), 1910, A., i, 641.
- 3:5-Dimethylpyrazole**, 4-amino- (MORGAN and REILLY), 1912, P., 334.
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- 4:5-Dimethylpyrazole** (WALLACH and STEINDORFF), 1904, A., i, 106.
- 3:4-Dimethylpyrazole-4-isoamylene- and -butylene-carboxylic acids**, 5-hydroxy-, lactones of (WOLFF and SCHREINER), 1908, A., i, 291.
- 3:5-Dimethylpyrazoleimino-3'-phenyl-isooxazolone** (MEYER), 1911, A., i, 687.
- Dimethylpyrazolidine** and its salts and dibenzoyl derivative (TAFEL and PFEFFERMANN), 1903, A., i, 288.
- 1:2-Dimethyl-3:5-pyrazolidone-4-p-tolylhydrazone** (BÜLOW and WEIDLICH), 1907, A., i, 1090.
- 3:4-Dimethyl-1:2-pyrazo-6:7-pyrone** (lactone of 5-hydroxy-3-methylpyrazole-4-isopropylencarboxylic acid) (WOLFF and SCHREINER), 1908, A., i, 291; (BÜLOW and SCHAUB), 1908, A., i, 579.
- 3:6-Dimethylpyridazine** and its salts, and 4:5-dicarboxylic acid and esters and salts (PAAL and UBBER), 1903, A., i, 290.
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- 3:6-Dimethylpyridazinecarboxylic acid**, ethyl ester (PAAL and UBBER), 1903, A., i, 290; (PAAL and KOCH), 1903, A., i, 722.
- Dimethylpyridine** (*lutidine*), indazole derivatives from (MICHAELIS and V. AREND), 1903, A., i, 292.
- Dimethylpyridine** *heptachloro-*, absorption spectra of (PURVIS), 1908, A., ii, 746.
- 2:3-Dimethylpyridine** from Scottish shale oil and its salts (GARRETT and SMYTHE), 1903, T., 764; P., 164.
- 2:4-Dimethylpyridine** and its salts, 6-amino-3-cyano-, 6-chloro-3-cyano-, 3-cyano-, and 3-cyano-6-hydroxy- (V. MEYER and HENNING), 1908, A., i, 911.
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- 2:6-Dimethylpyridine**, condensation of, with aldehydes (WERNER), 1903, A., i, 574.
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- 2:6-Dimethylpyridine**, 3:5-*dicyano-* (V. MEYER and KLEINSTÜCK), 1908, A., i, 910.
- 4:5-Dimethylpyridine**, 2:6-*di*hydroxy-, and its hydrochloride and dibenzoyl and *isonitroso*-derivatives (ROGERSON and THORPE), 1905, T., 1696; P., 239.
- Dimethylpyridines**, indazoles and chloro-indazoles of (MICHAELIS and MÜHLBERG), 1909, A., i, 533.
- 2:4- and 2:6-, absorption spectra of the vapours of (PURVIS), 1910, T., 702; P., 45.
- 2:4- and 2:5-, and their additive salts from coal tar (AHRENS and GORKOW), 1904, A., i, 615.
- 2:5- and 3:5-, and their salts, from coal tar (AHRENS and GORKOW), 1903, A., i, 515.
- 2:6-Dimethylpyridine-3-carboxylic acid**, ethyl ester, and its salts (RABE and MILARCH), 1912, A., i, 719.
- 3:4-Dimethylpyridine-5-carboxylic acid**, 2:6-*di*hydroxy-, ethyl ester, and its hydrochloride (ROGERSON and THORPE), 1905, T., 1701; P., 239.
- 3:5-Dimethylpyridine-4-carboxylic acid**, 2:6-*di*hydroxy-. See 3:5-Dimethylcitraizinic acid.
- 2:6-Dimethylpyridine-3:5-dicarboxylic acid** (MOHR and SCHNEIDER), 1904, A., i, 523.
- 2:6-Dimethylpyridine-3:5-dicarboxylic acid-4-methylnitrolic acid**, ethyl ester (BENARY), 1911, A., i, 320.
- 2:6-Dimethylpyridine-3:4:5-tricarboxylic acid**, diethyl ester (BENARY), 1911, A., i, 320.
- Dimethylpyridones**, velocities of reaction of, with phenylhydrazine and with hydroxylamine (SCHÖTTLE), 1911, A., ii, 1079.
- haloid salts and phenylhydrazone (PETRENKO-KRITSCHENKO and STAMOGLU), 1903, A., i, 197.
- 2:6-Dimethyl-4-pyridone**, 3-*mono-* and 3:5-*di*-bromo- (FEIST and BAUM), 1905, A., i, 915.
- 3-cyano- (V. MEYER and IRMSCHER), 1908, A., i, 911.
- Dimethyl-6-pyridones**, cyano- (V. MEYER and HENNING), 1908, A., i, 911.
- 2:6-Dimethyl-4-pyridone-3-carboxylic acid**, ethyl ester (MICHAELIS), 1909, A., i, 528.
- 2:6-Dimethyl-4-pyridone-*o*-carboxy-phenylhydrazone-3-carboxylic acid** and its ethyl esters, metallic salts, hydrochloride, platinichloride, and methiodide (MICHAELIS and REINIGHAUS), 1909, A., i, 530.
- 2:6-Dimethyl-4-pyridone-*m*-carboxy-phenylhydrazone-3-carboxylic acid**, ethyl ester, and platinichloride (MICHAELIS and REINIGHAUS), 1909, A., i, 531.
- 2:6-Dimethyl-4-pyridone-3:5-dicarboxylic acid**, ethyl ester, characteristics of, and potassium derivative (SABANÉEFF), 1909, A., i, 832.
- 2:6-Dimethyl-4-pyridone-3:5-dicarboxylic acid**, 1-hydroxy- (PALAZZO), 1906, A., i, 701.
- 2:6-Dimethyl-4-pyridone- β -naphthylhydrazone-3-carboxylic acid** and its hydrochloride (MICHAELIS and KRIETEMEYER), 1909, A., i, 531.
- 2:6-Dimethyl-4-pyridonephenylhydrazone-3-carboxylic acid**, ethyl ester, platinichloride and alkyl haloids (MICHAELIS and KRIETEMEYER), 1909, A., i, 529.

- 2:6-Dimethyl-4-pyridone-*o*-tolylhydraz-one-3-carboxylic acid**, and its ethyl ester, mercurichloride, methiodide, and anhydride (*lutidino-*o*-tolylpyrazo-lone*) (MICHAELIS and V. GHIEL), 1909, A., i, 531.
- 2:6-Dimethyl-4-pyridone-*p*-tolylhydraz-one-3-carboxylic acid** and its ethyl ester, salts, mercurichloride, and methiodide (MICHAELIS and V. GHIEL), 1909, A., i, 531.
- 2:6-Dimethylpyridyl-4-hydrazine** and its salts, benzyldenehydrazone, semicarbazide, and phenylthiosemicarbazide (MARCKWALD and RUDZIK), 1903, A., i, 515.
- 2:6-Dimethylpyridyl-4-phenylhydrazine** and -azobenzene and their salts (MARCKWALD and RUDZIK), 1903, A., i, 515.
- 1:3-Dimethylpyrimidine**, 4:5-*diamino-2:6-dihydroxy-*, formyl derivative, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 454.
- 4:5-Dimethylpyrimidine**, 2-cyanoamino-6-hydroxy- (POHL), 1908, A., i, 577.
- Dimethylpyroarsinic acid** and its disodium salt (BAUD), 1904, A., i, 801.
- 1:3-Dimethylpyrogallol carbamate**, preparation of (BASLER CHEMISCHE FABRIK), 1907, A., i, 920.
- Dimethylpyromucic acid** (MASSON), 1909, A., i, 944.
- Dimethylpyrone** (V. BAEYER and PICCARD), 1911, A., i, 901.
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- Dimethylpyrone**, compounds of, with trichloroacetic acid (PLOTNIKOFF), 1905, A., i, 77.
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- 2:6-Dimethylpyrone**, use of, as a solvent (POMA), 1912, A., ii, 130.
- 2:6-Dimethyl-4-pyrone**, bromo-derivatives (FEIST and BAUM), 1905, A., i, 914.
- 2:6-Dimethyl-4-pyrone**, 3-*mono-* and 3:5-*di-*bromo-, hydroperbromides of (FEIST), 1907, A., i, 949.
- 3:4-**, and **3:5-Dimethyl- α -pyrone**, 6-chloro-, and 6-hydroxy- (THOLE and THORPE), 1911, T., 2234.
- Dimethylpyronedicarboxylic acid**, ethyl ester, action of bromine on (PALAZZO), 1905, A., i, 458.
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- Dimethylpyrrocoline**, methiodide (SCHOLTZ), 1912, A., i, 649.
- 2:4-Dimethylpyrrole**, oxidation of (PLANCHER and CATTADORI), 1903, A., i, 361.
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- 2:4-Dimethylpyrrole**, nitro-, and its sodium salt (ANGELI and ALESSANDRI), 1911, A., i, 398.
- 2:5-Dimethylpyrrole**, a transformation of (ANGELI and MARCHETTI), 1908, A., i, 564.
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- 2:5-Dimethylpyrrole**, 1-amino-, and its benzoyl derivative (BÜLOW and V. KRAFFT), 1903, A., i, 196.
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- Dimethylpyrroles**, 2:4- and 2:5-, 3-*iso*-nitroso-, sodium derivatives (ANGELI, ANGELICO, and CALVELLO), 1904, A., i, 188; (ANGELICO and CALVELLO), 1904, A., i, 447.
- 2:4-Dimethylpyrrole-5-acetic acid** and its azo-derivative (FISCHER and BARTHOLOMÄUS), 1912, A., i, 648.
- 2:5-Dimethylpyrrole-3-aldehyde**, and its *p*-nitrophenylhydrazone, and its corresponding naphthacinchoninic acid (PLANCHER and PONTI), 1910, A., i, 132.
- 2:5-Dimethylpyrrole-3-carboxylic acid**, ethyl ester (OSIPOFF and KORSCHUN), 1904, A., i, 264; (KORSCHUN), 1904, A., i, 615.
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- 2:3-Dimethylpyrrole-4-carboxylic acid** and its ethyl ester (PILOTY and WILKE), 1912, A., i, 899.
- 2:5-Dimethylpyrrole-3:4-dicarboxylic acid**, 1-amino-, ethyl ester, as the parent substance of *N*-bispyrrole derivatives (BÜLOW and SAUTERMEISTER), 1904, A., i, 690.
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- 2:3-Dimethylpyrrole-4:5-dicarboxylic acid** and its esters (PILOTY and WILKE), 1912, A., i, 899.
- 2'':5''-Dimethyl-4-pyrrolediphenic acid** (SCHMIDT and SCHALL), 1907, A., i, 724.
- 2:4-Dimethylpyrrole-5-propionic acid** and its azo-derivative (FISCHER and BARTHOLOMÄUS), 1912, A., i, 648.
- 1:3-Dimethylpyrrolidine**, and its derivatives (LÖFFLER and LUKOWSKY), 1910, A., i, 632.
- 2:5-Dimethylpyrrolidine**, 3-amino-, and its picrate (MORELLI and MARCHETTI), 1908, A., i, 363.
- 1:2-Dimethylpyrroline** and its bromination (MASCARELLI and TESTONI), 1904, A., i, 341.
- 2:5-Dimethylpyrroline-5-carboxylic acid** (SCHLESINGER), 1909, A., i, 412.
- 2:5-Dimethylpyrroline-5-carboxylic acid**, synthesis of, and its copper salt (ZELINSKY and SCHLESINGER), 1907, A., i, 721.
- Dimethylpyruvic acid** and its oxime, semicarbazone, hydrazone and ethyl ester (PERKIN and SIMONSEN), 1909, P., 164.
- 2:3-Dimethyl-4-quinazolone**, 6-, and 7-amino-, and their derivatives (BOGERT, AMEND, and CHAMBERS), 1910, A., i, 895.
- 2:6-Dimethyl-4-quinazolone**, 7-amino-, and its acetyl derivative (BOGERT and KROPFF), 1909, A., i, 843.
- 1:4-Dimethylquinol**. See *p*-Xyloquinol.
- 2:4-Dimethylquinol**. See Xylorcinol.
- 2:4-Dimethylquinoline**, condensation of, with aldehydes (SPALLINO and CUCCHIARONI), 1912, A., i, 581.
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- 2:4-Dimethylquinoline**, 3-chloro-, and its picrate (PLANCHER and CARRASCO), 1905, A., i, 298.
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- 2:6-Dimethylquinoline** and its 4-carboxylic acid and its ethyl ester (SIMON), 1908, A., i, 687.
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- 2:6-Dimethylquinoline**, 8-bromo-, and its salts (GARROD, JONES, and EVANS), 1912, T., 1391.
8-nitro-, and its hydrochloride (BARTOW and MCCOLLUM), 1904, A., i, 686.
- 2:8-Dimethylquinoline**, condensation of, with aldehydes (HOFFMANN), 1906, A., i, 40.
- 4:6-Dimethylquinoline-2-carboxylic acid** (SIMON), 1908, A., i, 739.
- 2:6-Dimethylquinoline-*p*-methoxyquinolinecyanine ethiodide** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 716.
- 1:1-Dimethylquinolinium picrate** (DECKER, ELIASBERG, and WISLOKI), 1903, A., i, 718.
- 1:8-Dimethyl-2-quinolone**, 5-nitro- (DECKER, GADOMSKA, SANDBERG, and STAVROLOPOULOS), 1905, A., i, 375.
- 1:6- and 1:8-Dimethyl-2-quinolones**, 4-cyano- (KAUFMANN and ALBERTINI), 1909, A., i, 958.
- 1:6-Dimethyl-2-quinolone-4-carboxylic acid** (KAUFMANN and ALBERTINI), 1909, A., i, 959.

- 1:4-Dimethylquinonitrole, 3:4:6-tri-bromo-, and its additive compound with nitric acid (ZINCKE and BREITWEISER), 1911, A., i, 216.
- 6:8-Dimethylquinophthalone (EIBNER), 1905, A., i, 716.
- 2:3-Dimethylquinoxaline and its additive salts (GABRIEL and SONN), 1908, A., i, 60.
- Dimethylracemic acid, imide of (DIELS and STRAUER), 1912, A., i, 943.
- Dimethyl rhamnose and its reaction with methyl alcohol and with phenylhydrazine (PURDIE and YOUNG), 1906, T., 1200; P., 201.
- Dimethylrheine and its chloride, amide and ethyl ester (ROBINSON and SIMONSEN), 1909, T., 1093; P., 76.
- 4:5-Dimethylsalicylaldehyde, and 3-nitro-, and 3:6-dinitro- (CLAYTON), 1910, T., 1404.
- 5:6-Dimethylsalicylaldehyde, and 3-nitro- (CLAYTON), 1910, T., 1404.
- Dimethylsalicylaldehydes, *o*- and *op*- (ANSELMINO), 1903, A., i, 122.
- Dimethylsalicylaldehydophenylhydrazones, *op*-, *mp*-, and *p*- (ANSELMINO), 1903, A., i, 121.
- 4:5-Dimethylsalicylic acid, 3:6-dinitro- (CLAYTON), 1910, T., 1402.
- 5:6-Dimethylsalicylic acid (CLAYTON), 1910, T., 1405.
- Dimethylselenodiazole (STOLLÉ and GUTMANN), 1904, A., i, 697.
- Dimethylsemicarbazide (KNORR and KÖHLER), 1906, A., i, 817.
- $\alpha\alpha$ -Dimethylsorbic acid (*octinoic acid*), β -hydroxy-, and its ethyl ester and salts (JAWORSKY and REFORMATSKY), 1903, A., i, 4; (JAWORSKY), 1903, A., i, 730.
- $\beta\beta$ -Dimethylsorbic acid (*octinoic acid*), and its ethyl ester (RUPE and LOTZ), 1903, A., i, 229.
- menthyl ester, and barium and calcium salts (RUPE and LOTZ), 1909, A., i, 928.
- Dimethylsparteine (MOUREU and VALEUR), 1905, A., i, 716.
- Dimethylstannic oxalate and sulphide (PFEIFFER, LEHNHARDT, LUFTENSTEINER, PRADE, SCHNURMANN, and TRUSKIER), 1910, A., i, 724.
- Dimethylstannone (PFEIFFER and LEHNHARDT), 1903, A., i, 803.
- 2:4-Dimethyl- α -stilbazole and its platinumchloride (KOENIGS and v. BENTHEIM), 1906, A., i, 37.
- 4:4'-Dimethyl-stilbazole and its additive salts and -stilbazoline (LANGER), 1906, A., i, 38.
- 4:6-Dimethyl-2-stilbazole, 2'-hydroxy-, and its salts (BRAMSCH), 1909, A., i, 415.
- 2:2'-Dimethylstilbene, 4:4'-dinitro- (GREEN and BADDILEY), 1908, T., 1723; P., 202.
- 3:3'-Dimethylstilbene dibromide (LAW), 1907, T., 757.
- Dimethylstilbenes, *o*-, *m*-, and *p*- (WISLICHENUS and WREN), 1905, A., i, 284.
- α :3-Dimethylstyrene, 5-bromo-6-hydroxy- (FRIES and MOSKOPP), 1910, A., i, 334.
- 6-hydroxy-, and its benzoyl derivative and polymeride (FRIES and FICKEWIRTH), 1908, A., i, 160.
- α :4-Dimethylstyrene, β -chloro- (AUWERS), 1905, A., i, 434; (AUWERS and HESSENLAND), 1907, A., i, 401.
- 2-hydroxy-, and its polymeride and compound with ether (FRIES and FICKEWIRTH), 1908, A., i, 160.
- ω -5-dinitro-2-hydroxy-, and its sodium salt (CLAYTON), 1910, T., 1407.
- 1:3-Dimethylstyrene, β -chloro- (AUWERS and KÖCKRITZ), 1907, A., i, 401.
- 2:4-Dimethylstyrene, 6- ω -dichloro- (AUWERS), 1911, A., i, 385.
- 3:4-Dimethylstyrene, β -chloro- (AUWERS and KÖCKRITZ), 1907, A., i, 402.
- Dimethylstyrylcarbinol (KÖHLER and HERITAGE), 1905, A., i, 207.
- Di-*p*-methylstyryl ketone (di-*p*-tolylideneacetone) and its derivatives (GATTERMANN), 1906, A., i, 590.
- 2:5-Dimethylstyryl methyl ketone and its derivatives (GATTERMANN), 1912, A., i, 984.
- Dimethylstyryl methyl ketones, 2:4- and 3:4-, and their semicarbazones (GATTERMANN), 1906, A., i, 591.
- Di-*p*-methylstyrylpyrazine and its additive salts (FRANKE), 1906, A., i, 47.
- 2:6-Di-*p*-methylstyrylpyridine and its salts and tetrabromide (WERNER), 1903, A., i, 574.
- $\alpha\alpha$ -Dimethylsuccinic acid (*butanedicarboxylic acid*) (PERKIN), 1903, T., 845.
- $\alpha\alpha$ -Dimethylsuccinic acid, bromo-, preparation of, and action of diethylaniline on (BONE and HENSTOCK), 1903, T., 1333; P., 247.
- as*-Dimethylsuccinic acid, formation of (LAPWORTH), 1904, T., 1222; P., 177.
- Dimethylsuccinic acids, preparation of (HIGSON and THORPE), 1906, T., 1463; P., 242.

- Dimethylsuccinic acids**, *s*- and *as*-, acid esters (BONE, SUDBOROUGH, and SPRANKLING), 1904, T., 545; P., 64.
- as*-Dimethylsuccinic glycol**. See δ -Methylpentane- $\alpha\beta$ -diol.
- Dimethylsulphamide**, *d*initroso- (WOHL and KOCH), 1911, A., i, 37.
- Di- β -methylsulphone-ethylthiocarbamide** (SCHNEIDER, MÜLLER, and BECK), 1912, A., i, 192.
- s*-Di- γ -methylsulphonepropylcarbamide** (SCHNEIDER), 1910, A., i, 660.
- Di- γ -methylsulphonepropylthiocarbamide** (SCHNEIDER), 1910, A., i, 660.
- s*-Di- γ -methylsulphonepropylthiocarbamide** (SCHNEIDER), 1910, A., i, 660.
- Dimethylsulphoxylic acid**, imino-, sodium salt (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 229.
- Dimethylsulphurous acid**, imino-, sodium salt (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 229.
- Dimethyltanacetone** (HALLER), 1905, A., i, 602.
- Dimethyl-*i*-tartaric acid**, imide of (DIELS and STRAUMER), 1912, A., i, 943.
- Dimethyltetrahydroacetophenone** (LESER), 1910, A., i, 48.
- d*-5:8-Dimethyl-1:2:3:4-tetrahydroacridine**, and its salts (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.
- Dimethyltetrahydroanthraquinone**, dihydroxy-, and its diacetyl derivative (TSCHIRCH and CRISTOFOLETTI), 1905, A., ii, 852.
- Dimethyltetrahydrobenzene**. See Dimethylcyclohexene.
- 4:9-Dimethyl- $\Delta^{1(6)}$ -tetrahydrocarbazole** and its picrate (BORSCHKE, WITTE, and BOTHE), 1908, A., i, 366.
- 1:4-Dimethyltetrahydrofuran**, stereochemistry of (CAMPO Y Cerdán), 1910, A., i, 868.
- 2:2-Dimethyltetrahydrofuran** (HENRY), 1907, A., i, 106.
- 3:4-Dimethyltetrahydro-5-glyoxalone**, 2-imino- (α -methylguaninopropionic acid lactam) and its salts (GANSSEER), 1909, A., i, 702.
- d*-6:9-Dimethyl-5:6:7:8-tetrahydrophenanthridene**, and its salts (BORSCHKE, SCHMIDT, TIEDTKE, and ROTTSIEPER), 1910, A., i, 882.
- 1:2-Dimethyl- Δ^2 -tetrahydropyridine**, action of formaldehyde on (LIPP and WIDMANN), 1905, A., i, 610, 662.
- 2:4-Dimethyl- Δ^2 -tetrahydro-6-pyridone-3-carboxylamide**, 4-amino-, and its silver and barium salts (CHICK and WILMORE), 1910, T., 1993; P., 217.
- 1:4-Dimethyltetrahydro-6-pyrimidone**, 2-imino-, and its additive salts (MAJIMA), 1908, A., i, 223.
- 1:8-Dimethyltetrahydroquinoline** and its additive salts, synthesis of (FREUND), 1904, A., i, 267.
- 2:5-Dimethyltetrahydroquinoline**. See Tetrahydro-*p*-toluquinaldine.
- 1:2-Dimethyltetrahydroisoquinoline** and its methiodide (FREUND and BODE), 1909, A., i, 516.
- Dimethyltetrahydroquinolines**, synthesis of (EWINS and KING), 1912, P., 328.
- 2:4-Dimethyltetrahydroquinolines**, four stereoisomeric optically active, and their salts and derivatives (THOMAS), 1912, T., 725; P., 108.
- Dimethyltetrahydroquinolinium bromide** (v. BRAUN), 1909, A., i, 604.
- C*-Dimethyltetrazoline** and its reactions (RUHEMANN and MERRIMAN), 1905, T., 1779.
- and its iodides (RUHEMANN), 1906, A., i, 465.
- action of aldehydes and methyl iodide on (RUHEMANN), 1906, T., 1270; P., 238.
- 3:3-Dimethyltetroneic acid** (BENARY), 1907, A., i, 381.
- Dimethylthallium compounds** (MEYER and BERTHEIM), 1904, A., i, 656.
- Dimethylthebainemethine methiodide** (KNORR and PSCHORR), 1905, A., i, 814.
- Dimethylthetine menthyl ester**, nitrate of (SMILES), 1907, P., 291.
- l*-menthyl ester, salts of, molecular rotations of (SMILES), 1905, T., 453; P., 93.
- 3:7-Dimethylthianthren monoxide and dioxide** (FRIES and VOLK), 1909, A., i, 406.
- 2:6-Dimethylthianthren-3:7-diphthaloylic acid** (SCHOLL and SEER), 1911, A., i, 558.
- 5:5-Dimethylthiobarbituric acid** (EINHORN), 1908, A., i, 315.
- $\beta\beta'$ -Dimethylthiocarbamide**, salts of (SCHENCK), 1911, A., i, 843.
- as*-Dimethylthiocarbamide**, aurichloride of (SCHENCK), 1911, A., i, 842.
- Dimethylthiocarbamic acid**, esters of (BILLETER), 1910, A., i, 545; (DELÉPINE and SCHVING), 1910, A., i, 721.
- 4:7-Dimethylthiocoumarin** and its mercurichloride (CLAYTON), 1908, T., 529; P., 26.
- 6:7-Dimethylthiocoumarin**, and 5-nitro- (CLAYTON and GODDEN), 1912, T., 214.

- Dimethylthioformamide** and its methiodide (WILLSTÄTTER and WIRTH), 1909, A., i, 460.
- 4'-Dimethylthioindigotin** (AUWERS and ARNDT), 1909, A., i, 176.
- Dimethylthiolanilino-*p*-benzoquinone** (ZINCKE and JÖRG), 1911, A., i, 40.
- 1:1'-Dimethylthiol-4:4'-azonaphthalene** (ZINCKE and SCHÜTZ), 1912, A., i, 348.
- 1:4-Dimethylthiolbenzene** and its tetrabromide and tetraiodide and 1:4-*di*-bromo-, and *ω*-hexachloro- (ZINCKE and FROHNEBERG), 1909, A., i, 643.
- 2:4-Dimethylthiolbenzoic acid** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 797.
- Di-*p*-methylthioldiazoaminobenzene** (ZINCKE and JÖRG), 1911, A., i, 40.
- 3:3'-Dimethylthioldibenzyl**, 2:5:2':5'-*tetrabromo-4:4'-dihydroxy-*, and its derivatives (ZINCKE, FROHNEBERG, and KEMPF), 1911, A., i, 441.
- Dimethylthiolhydrobenzoin dimethyl ether**, *tetrabromo-dihydroxy-* and its diacetyl derivative (ZINCKE, FROHNEBERG and KEMPF), 1911, A., i, 441.
- 3:3'-Dimethylthiolstilbene**, 2:5:2':5'-*tetrabromo-4:4'-dihydroxy-*, and its derivatives (ZINCKE, FROHNEBERG, and KEMPF), 1911, A., i, 441.
- 3:3'-Dimethylthiolstilbene-*p*-quinone** 2:5:2':5'-*tetrabromo-* (ZINCKE, FROHNEBERG, and KEMPF), 1911, A., i, 441.
- Dimethylthioncarbamie acid**, phenyl ester (RIVIER), 1906, A., i, 948.
- as*-**Dimethylthionine** and its chloride (KEHRMANN and DUTTENHÖFER), 1906, A., i, 460.
- as*-**Dimethylthionine**, *diamino-*, and *dinitro-*, and their salts (GNEHM and WALDER), 1908, A., i, 64.
- Dimethylthionuracil** (BEHREND and HESSE), 1904, A., i, 379.
- Di- γ -methylthiopropylthiocarbamide** (SCHNEIDER), 1910, A., i, 660.
- 2:9-Dimethylthioquinanthren** and its additive salts (EDINGER and EKELEY), 1903, A., i, 58.
- N-S*-**Dimethylthiourethane** (v. BRAUN), 1903, A., i, 14.
- 1:3-Dimethylthioxanthone** (MARSDEN and SMILES), 1911, T., 1356.
- 1:4-Dimethylthioxanthone** (MARSDEN and SMILES), 1911, T., 1355.
- 1:3-Dimethylthymine** (JOHNSON and CLAPP), 1908, A., i, 836.
- p*-**Dimethyltolane** (IRVINE and MOODIE), 1907, T., 540; P., 62.
- Dimethyl-*o*-toluidine**, latent heat of vaporisation of (LUGININ), 1903, A., ii, 7.
- dihydrobromide* (KAUFLER and KUNZ), 1909, A., i, 556.
- dihydrochloride* (KAUFLER and KUNZ), 1909, A., i, 137.
- picrate* (VIGNON and ÉVIEUX), 1908, A., ii, 665.
- Dimethyl-*p*-toluidine**, absorption spectra of the nitration products of (MORGAN and CLAYTON), 1911, T., 1941; P., 233.
- triphenylmethane dyes from* (CASSELLA & Co.), 1904, A., i, 804.
- picrate and m-bromo-* (v. BRAUN), 1908, A., i, 626.
- Dimethyl-*p*-toluidine**, 2:5-*diamino-*, and its acetyl derivatives, 2:5- and 2:6-*dinitro-*, and 5-nitro-2-amino-, acetyl derivative (MORGAN and CLAYTON), 1910, T., 2650; P., 323.
- 2:3:6-*trinitro-* (MORGAN and CLAYTON), 1911, T., 1942; P., 233.
- Dimethyl-*o*- and -*p*-toluidines**, preparation of (CLARKE), 1905, A., i, 427.
- bromo-derivatives*, and their *perbromides* (FRIES), 1906, A., i, 648.
- Dimethyltoluquinolphthalein** and its derivatives (KEHRMANN and SILZER), 1910, A., i, 408.
- Dimethyltolylenediamine**. See *Tolylenedimethyldiamine*.
- Dimethyltriazene**. See *Diazoaminomethane*.
- 1:5-Dimethyltriazole** and its salts (WOLFF and KRÜCHE), 1912, A., i, 1030.
- 2:5-Dimethyl-1:3:4-triazole**, 1-amino-, and its sulphate and acetyl derivative, and *tetrachloroplato-derivative* (PELLIZZARI), 1909, A., i, 534.
- 3:4-Dimethyl-1:2:5-triazole**, and 1-amino-, and salts (v. PECHMANN and BAUER), 1909, A., i, 271.
- 3:4-Dimethyl-1:2:5-triazole**, 1-amino-, *dibenzoyl derivative* (STOLLÉ), 1909, A., i, 123.
- 1:5-Dimethyl-1:2:3-triazole-4-carboxylic acid** (WOLFF and KRÜCHE), 1912, A., i, 1030.
- $\alpha\gamma$ -Dimethyltricarballic acid*, *trans-*, and its anhydro-acid (PERKIN and THORPE), 1906, T., 794.
- $\beta\mu$ -Dimethyltridecane- $\alpha\epsilon\iota\nu$ -tetracarboxylic acid*, ethyl ester (KÖTZ and KAYSER), 1906, A., i, 668.
- 1:1'-Dimethyl-4:4'-trimethylenedicyclohexane-3:3'-dione** and its semicarbazono (KÖTZ and KAYSER), 1906, A., i, 668.

- 4:4'-Dimethyl-1:1'-trimethylenedicyclohexane-2:2'-dione-1:1'-dicarboxylic acid**, ethyl ester (KÖTZ and KAYSER), 1906, A., i, 667.
- 2:3-Dimethyltrimethylenedimethylammonium hydroxide and iodide** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 822.
- Dimethyltrimethylene glycol**. See $\beta\beta$ -Dimethylpropane- $\alpha\gamma$ -diol.
- Dimethyltrimethylenimine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 822.
- 2:5-Dimethyltriphenylacetic acid**, 4-hydroxy-, and its acetyl and bromo-derivatives (GEIPERT), 1904, A., i, 318.
- Dimethyltriphenylacetic acids**, 3:5- and 4:5-, 2-hydroxy-, lactones of (GEIPERT), 1904, A., i, 318.
- 5''':5'''-Dimethyltriphenylmethane**, 2'':2'''-diamino-3'-nitro- and -4'-nitro- (ULLMANN and WEINTRAUB), 1903, A., i, 520.
- 5:5'-Dimethyltriphenylmethane-3:3'-dicarboxylic acid**, 4:4'-, and 2:2'-, dihydroxy-, and their diacetyl derivatives (MADSEN), 1909, A., i, 162.
- 6:6'-Dimethyltriphenylmethane-3:3'-dicarboxylic acid**, 4:4'-dihydroxy-, and its diacetyl derivative (MADSEN), 1909, A., i, 162.
- 2:2'-Dimethyltritanic acid**, 4:4'-dihydroxy-, 5:5'-ether of (v. LIEBIG), 1908, A., i, 541.
- Dimethyltropic acid**, ethyl ester (BLAISE and COURTOT), 1906, A., i, 795.
- Dimethylumbelliferone** and its acetyl derivative and methyl ether (COLLIE and CHRYSTALL), 1907, T., 1804; P., 232; (COLLIE), 1907, T., 1811.
- $\beta\kappa$ -Dimethylundecane- $\alpha\eta\lambda$ -tetracarboxylic acid**, ethyl ester (KÖTZ and KAYSER), 1906, A., i, 667.
- $\alpha\alpha$ -Dimethyl- Δ^{κ} -undecenyl alcohol** (HARDING, WALSH, and WEIZMANN), 1911, T., 449.
- $\alpha\alpha$ -Dimethyl- $\beta\gamma$ -unsaturated acids**, lactonisation of (BLAISE and COURTOT), 1906, A., i, 793.
- α -Dimethyluracil** (2:6-dioxy-3:4-dimethyltetrahydropyrimidine), amino-, and nitro- (HENKEL), 1911, A., i, 159.
- β -Dimethyluracil** (2:6-dioxy-1:4-dimethyltetrahydropyrimidine), amino-, bromo-, and nitro- (HENKEL), 1911, A., i, 160.
- hydroxy- (BEHREND and FRICKE), 1908, A., i, 739.
- 1:3-Dimethyluracil and 5-bromo-** (JOHNSON and CLAPP), 1908, A., i, 836.
- 1:4-Dimethyluracil**, preparation of (WHEELER and McFARLAND), 1909, A., i, 677.
- 4:5-Dimethyluracil**, synthesis of (WHEELER and MERRIAM), 1903, A., i, 525.
- Dimethyluracils**, oxidation of (BEHREND and HUFSCHMIDT), 1906, A., i, 311.
- α - and β -, acidic constants of (WOOD), 1906, T., 1833.
- Dimethyluracilcarboxylic acid**, nitro- (BEHREND and HUFSCHMIDT), 1906, A., i, 311.
- 1:3-Dimethyluracil-4-nitriloxide**, 5-nitroso- (BEYTHIEN), 1912, A., i, 587.
- Dimethylureideindoaniline** (PILOTY and FINCKH), 1904, A., i, 821.
- 1:3-Dimethyluric acid**, physiological action of (STARKENSTEIN), 1907, A., ii, 640.
- 3:7-Dimethyluric acid**, degradation of (BILTZ and TOPP), 1911, A., i, 692.
- mercuric salt (AULD), 1907, T., 1046; P., 152.
- 7:9-Dimethyluric acid**, degradation of (BILTZ and KREBS), 1910, A., i, 521.
- $\alpha\alpha$ -Dimethylvaleric acid** (ethylpivalic acid), and its amide (HALLER and BAUER), 1909, A., i, 131.
- $\alpha\alpha$ -Dimethylvaleric acid**, $\beta\gamma$ -dibromo-, action of alkali carbonates on (COURTOT), 1906, A., i, 789.
- hydroxy-, and its ethyl ester, salts, phenylcarbamate and acetyl derivative (COURTOT), 1906, A., i, 396.
- β -hydroxy-, ethyl ester (LETELLIER), 1908, A., i, 242.
- β -iodo- γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 537.
- $\beta\beta$ -Dimethylvaleric acid**, δ -bromo-, and its ethyl ester (BLANC), 1906, A., i, 399.
- $\gamma\gamma$ -Dimethylvaleric acid**. See Heptoic acid.
- $\alpha\alpha$ -Dimethylvalerolactone** (BLANC), 1905, A., i, 680, 681; (BLAISE and COURTOT), 1906, A., i, 793.
- $\alpha\alpha$ -Dimethylvalerolactone**, β -bromo- (COURTOT), 1906, A., i, 396.
- reaction of, with quinoline (BLAISE and COURTOT), 1906, A., i, 927.
- and β -hydroxy- (COURTOT), 1906, A., i, 789.
- $\alpha\gamma$ -Dimethylvalerolactone**, $\alpha\gamma$ -dihydroxy- (4-hydroxy-5-keto-2:2:4-trimethyltetrahydrofuran) (KOHN), 1909, A., i, 599.
- $\beta\beta$ -Dimethylvalerolactone** (BLANC), 1905, A., i, 681; 1906, A., i, 399.
- $\alpha\gamma$ -Dimethylvaleronitrile**, α -hydroxy- (ULTÉE), 1909, A., i, 294.

- Dimethylvinylacetic acid** and its anilide and lactone (BLAISE), 1903, A., i, 604.
 and its isomeride (BLAISE and COURTOT), 1904, A., i, 796.
- Dimethylviolurates**, pantachromism of (HANTZSCH and ROBISON), 1910, A., i, 196;
- Dimethylvioluric acid** (BEYTHIEN), 1912, A., i, 587.
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- 1:8-Dimethyl-xanthen** and **-xanthone** (FOSSE and ROBYN), 1903, A., i, 647.
- Dimethylxanthines**. See Paraxanthine, Theobromine, Theocine, and Theophylline.
- Dimethylxanthogenamide** (BILLETER and RIVIER), 1905, A., i, 50.
- 2:4-Dimethylxanthone** (ÜLLMANN and ZLOKASOFF), 1905, A., i, 598.
- 4:5-Dimethylxanthone** (FOSSE), 1903, A., i, 510.
- Dimethylxanthenes**, 2:7- and 4:5- (FOSSE and ROBYN), 1904, A., i, 318.
- as*-**Dimethyl-*m*-xylylidine** and its salts (V. BRAUN and KRUBER), 1912, A., i, 969.
- Dimethyl-*m*-2-xylylidine** (BAMBERGER and RUDOLPH), 1907, A., i, 122.
- Dimethyl-*m*-4-xylylidine**, nitro-, picrate of (MORGAN and MICKLETHWAIT), 1907, T., 365.
- as*-**Dimethyl-*o*-xylylene oxide**. See 1:1-Dimethyl-1:2-dihydroisobenzofuran.
- Dimorphism** and mixed crystals occurring in liquid-crystalline substances (LEHMANN), 1910, A., ii, 772.
- Dimorpholyttetrazone** (KNORR and BROWNSDON), 1903, A., i, 154.
- Dimorphous substances**, slowness of the spontaneous transformation of the unstable variety of, at low temperatures (GERNEZ), 1909, A., ii, 466.
- Dimyristin** and its compound with myristic acid (GRÜN and SCHACHT), 1907, A., i, 463.
- αβ*-**Dimyristin** and *α*-chloro- (GRÜN and THEIMER), 1907, A., i, 464.
- αα*-**Di-*β*-naphthacarbazole** (2:2-di-naphtha-1:1-imine) (VESELÝ), 1905, A., i, 236.
- Dinaphthacarbazoles**, *s*-1:2-, and 1:2:2':1'- (JAPP and MAITLAND), 1903, T., 273; P., 19.
- 1:1'-Dinaphtha-2:2'-carbazole-*N*-sulphonic acid**, sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 522.
- 1:2'-Dinaphtha-2:1'-carbazolesulphonic acid**, sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 523.
- Di-*β*-naphthacoumarin** (BARTSCH), 1903, A., i, 649.
- ββ*-**Dinaphthacridine**, triboluminescence of (MORGAN), 1905, A., ii, 786.
 trimagnesium alkyl iodides (SENIER, AUSTIN, and CLARKE), 1905, T., 1473.
- β*-*N*-*β*
 |
α-CH₃
-Dinaphthacridine, 7-bromo-, and its additive salts (SENIER and AUSTIN), 1907, P., 300; 1908, T., 66.
- β*-*N*-*β*
 |
β-CH₃
-Dinaphthacridine, attempted synthesis of (SENIER and AUSTIN), 1907, P., 300.
- Di-*α*- and -*β*-naphthacridine haloids** (SENIER and AUSTIN), 1904, T., 1204; P., 176.
- Dinaphthacridines** (SENIER and AUSTIN), 1906, T., 1387; P., 240.
 7-aryl derivatives, synthesis of (SENIER and AUSTIN), 1907, T., 1233; P., 185.
- β*-*N*-*β*
 |
β-CH₃
-Dinaphthacridines, attempted synthesis of (SENIER and AUSTIN), 1908, T., 63.
- 1:1-Dinaphtha-2:2-*o*-diazine**, and its salts and oxide (MEISENHEIMER and WITTE), 1904, A., i, 176, 194.
- Dinaphthafuoflavine** and its phenylsulphone (HINSBERG and SCHWANTES), 1904, A., i, 199.
- αα*-**Dinaphthafuorene** (SCHMIDLIN and MASSINI), 1909, A., i, 562.
- ββ*-**Dinaphthafuorene** (SCHMIDLIN and HUBER), 1910, A., i, 833.
- αα*- and *ββ*-**Dinaphthafuorenone** (SCHMIDLIN and HUBER), 1910, A., i, 833.
- Diisomaphthafuorenyl** (THIELE and WANSCHIEDT), 1910, A., i, 832.
- 2:2-Dinaphtha-1:1-imine**. See *αα*-Di-*β*-naphthacarbazole.
- peri*-**Dinaphthalene**. See Perylene.
- Di-*β*-naphthalenesulphonyldianthrani-*l*ide** (SCHROETER and EISLER), 1909, A., i, 576.
- Dinaphthalenesulphonylglycineamide** (KOENIGS and MYLO), 1909, A., i, 87.
- Dinaphthalene-1- and -2-sulphonylhydroxamic acids** (ANGELI, ANGELICO, and SCURTI), 1904, A., i, 311.
- Di-*β*-naphthalenesulphonyl-tyrosine** and *tyrosyl-dl*-leucine (FISCHER and BERGELL), 1903, A., i, 694.

- Dinaphthalenesulphonyl-*l*-tyrosineamide** (KOENIGS and MYLO), 1909, A., i, 88.
- $\alpha\beta\alpha'\beta'$ -Dinaphthanthracene**, preparation of (HOMER), 1910, T., 1141; P., 12. absorption spectra of, and of its hydro-derivative and isomerides (HOMER and PURVIS), 1910, T., 1155; P., 25.
- 5:7:12:14-Dinaphthanthradiquinone** (W. H. and M. MILLS), 1912, T., 2200; P., 242.
- Dinaphthanthraquinone** (W. H. and M. MILLS), 1912, T., 2206; P., 243.
- Dinaphthanthrone** (W. H. and M. MILLS), 1912, T., 2206; P., 243.
- Dinaphthapyranol**, constitution of (FOSSE), 1903, A., i, 49.
- basic power of (FOSSE), 1909, A., i, 734.
- picrate (FOSSE), 1909, A., i, 666.
- Dinaphthapyryl**. See **Dinaphthaxanthyl**.
- N-N'*-Ai-2- α -naphthaquinonyl-*p*-phenylenediamine** (PUMMERER and BRASS), 1911, A., i, 655.
- Dinaphthaquinoxanthhydryl salts** (GOMBERG and CONE), 1910, A., i, 870.
- Dinaphthastilbenes**, α - and β - (WISLICENUS and WREN), 1905, A., i, 284.
- Dinaphthathiophen** and its *hexabromo*- and *tetranitro*-derivatives (LANFRY), 1911, A., i, 555.
- Dinaphthaxanthen** (*dinaphthapyran*) (BETTI and MUNDICI), 1905, A., i, 213.
- Dinaphthaxanthen** (*dinaphthapyran*) series (FOSSE), 1904, A., i, 83, 336, 337, 816.
- Dinaphtha-xanthenes**, -xanthenes, and -xanthhydryl (FOSSE), 1904, A., i, 519.
- Dinaphthaxanthhydrole hydrochloride** and the action of methyl and ethyl alcohols on (BETTI and MUNDICI), 1905, A., i, 213.
- Dinaphthaxanthhydryl bromide** *per*-bromide, and chloride and its double salts (GOMBERG and CONE), 1910, A., i, 870.
- Dinaphthaxanthone picrate** and sulphide (FOSSE), 1909, A., i, 600.
- Dinaphthaxanthonium salts**, condensation of, with amines (ROBYN), 1905, A., i, 608.
- compounds of, with tertiary aromatic amines (FOSSE), 1904, A., i, 337.
- compounds of, with cresols (FOSSE), 1904, A., i, 336.
- interaction of, with phenols (FOSSE), 1904, A., i, 83; (FOSSE and ROBYN), 1905, A., i, 607.
- Dinaphthaxanthonium sulphate** (FOSSE and BERTRAND), 1904, A., i, 1042.
- Dinaphthaxanthyl** (*dinaphthapyryl*), halogen double salts of metals with (FOSSE and LESAGE), 1905, A., i, 541, 917.
- chromate, tri-iodide, nitroprusside, and sulphate (FOSSE and BERTRAND), 1909, A., i, 666.
- sulphide (FOSSE), 1909, A., i, 667.
- Dinaphthaxanthyl radicle**, electro-positive character, and reactions of (FOSSE), 1909, A., i, 667.
- Dinaphthaxanthyl radicles**, introduction of, into electronegative molecules (FOSSE and ROBYN), 1906, A., i, 756.
- Dinaphthaxanthyl salts**, metallic character, and reactions of (FOSSE), 1909, A., i, 666.
- Dinaphthaxanthyl-acetic**, -propionic, - α -isobutyric, -isovaleric, and -succinic acids (FOSSE), 1906, A., i, 691.
- Dinaphthaxanthyl-acetyl- and -benzoyl-acetones** (FOSSE and ROBYN), 1906, A., i, 756.
- 2-Dinaphthaxanthylbenzene**, 1:5-*di*-hydroxy-, and its diacetyl derivative (FOSSE and ROBYN), 1905, A., i, 607.
- Dinaphthaxanthyl-cyanoacetic** and -malonic acids, ethyl esters (FOSSE and ROBYN), 1906, A., i, 757.
- Dinaphthaxanthylmalonic acid** (FOSSE), 1906, A., i, 975.
- Dinaphthaxanthylphenols**, insoluble in aqueous alkali hydroxides (FOSSE and ROBYN), 1905, A., i, 607; (ROGOFF), 1905, A., i, 883.
- Dinaphthaxanthylphosphinous acid**, and its sodium and barium salts (FOSSE), 1910, A., i, 292, 531.
- Dinaphthazines**, $\alpha\beta$ and $\beta\beta$ -, diamino- and dinitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 543.
- $\beta\beta$ -Dinaphthol**, oxidation of (BÜNZLY and DECKER), 1905, A., i, 884.
- Dinaphtholcarbinol** (BETTI and MUNDICI), 1907, A., i, 322.
- Dinaphtholmethane** (BETTI and MUNDICI), 1907, A., i, 322.
- Di- β -naphtholmethylene-amine** and -hydroxylamine and their hydrochlorides (BETTI), 1906, A., i, 654.
- Di- β -naphtholpiperazine** (STEVIGNON), 1910, A., i, 781.
- 1:5-Di- β -naphthoxyanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 797.

- Di- β -naphthoxydiphenylmethane** (CLOUGH), 1906, T., 776; P., 109.
- 2:6-Di- α -naphthoylanthraquinone** (SEER), 1911, A., i, 386.
- Di- α -naphthoylhydrazide.** See Di- α -naphthylidenehydrazine.
- Dinaphthyl disulphide, di-hydroxy-,** preparation of (ULLMANN and BÜHLER), 1906, A., i, 45.
- $\alpha\alpha$ -Dinaphthyl, dibenzoyl derivative of** (SCHOLL), 1912, A., i, 195.
- selenide and telluride, and their dibromides and dichlorides (LYONS and BUSH), 1908, A., i, 417.
- diselenide (TABOURY), 1906, A., i, 834.
- $\alpha\alpha$ -Dinaphthyl, 2:2-diamino-.** See Naphthidine.
- $\beta\beta$ -Dinaphthyl** (ULLMANN), 1904, A., i, 726.
- preparation of (HOMER), 1907, T., 1103; P., 88.
- absorption spectra of (HOMER and PURVIS), 1908, T., 1321; P., 147.
- anilinophosphate (AUTENRIETH and GEYER), 1908, A., i, 157.
- ether (SABATIER and MAILHE), 1912, A., i, 767.
- selenide dichloride (LYONS and BUSH), 1908, A., i, 417.
- $\beta\beta$ -Dinaphthyl, 3:3'-dihydroxy-, azo-** dyes from (POZZI-ESCOT), 1904, A., i, 789.
- 1:1-dinitro- (VESELY), 1905, A., i, 236.
- $\alpha\alpha$ -Dinaphthylacetic acid** and its copper, and silver salts, and chloride (SCHMIDLIN and MASSINI), 1909, A., i, 562.
- Di- α - and - β -naphthylacetic acids,** and sodium salt of the latter (SCHMIDLIN and HUBER), 1910, A., i, 833.
- Dinaphthylamine, diiodo-** (WIELAND and SÜSSER), 1912, A., i, 905.
- 2:2'-Dinaphthylamine, 1-amino-, acetyl** derivative (FISCHER, FRITZEN, and EILLES), 1909, A., i, 616.
- 1:1'-dichloro- (SCHAPOSCHNIKOFF and GOLEFF), 1905, A., i, 644.
- thio- (KNOLL & Co.), 1912, A., i, 759.
- 2:2'-Dinaphthylamine-5:5'- and -6:6'-disulphonic acids** (BUCHERER and STOHMANN), 1905, A., i, 586.
- Dinaphthyltetraaminobenzene, diamino-** (NIETZKI and VOLLENBRUCK), 1904, A., i, 1063.
- 3:6-Di- β -naphthylamino-9-phenylxan-** thenyl chloride (POPE and HOWARD), 1911, T., 552.
- 9:10-Di- α -naphthylanthracene** (GUYOT and STAEHLING), 1905, A., i, 886.
- 1:1'-Dinaphthyl-4-azo-benzene- and -*m*-toluene and -4:4'-bisazo-benzene, -*p*-nitrobenzene, - β -naphthalene, and -*m*-toluene, 3:3'-dihydroxy-** (POZZI-ESCOT), 1905, A., i, 102.
- 2:2'-Dinaphthyl-1:1'-bisazobenzene, 3:3'-dihydroxy-** (POZZI-ESCOT), 1905, A., i, 101.
- 1:1'-Dinaphthylcarbamide-4:4'-disulphonic acid,** and its sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 522.
- $\alpha\alpha$ -Dinaphthylcarbinol** and its ethyl and phenyl ethers, and tetranitro-derivative (SCHMIDLIN and MASSINI), 1909, A., i, 562.
- $\alpha\beta$ -Dinaphthylcarbinol** and its compound with benzene (TSCHITSCHIBABIN), 1911, A., i, 277.
- $\beta\beta$ -Dinaphthylcarbinol,** and its compound with hexane (SCHMIDLIN and HUBER), 1910, A., i, 833.
- 1:1'-Dinaphthylcarbohydrazide-4:4'-disulphonic acid,** sodium salt (BUCHERER and SCHMIDT), 1909, A., i, 522.
- Di- β -naphthylechloromethane** (SCHMIDLIN and HUBER), 1910, A., i, 833.
- 9:10-Di- α -naphthyl dihydroanthracene, 9:10-dihydroxy-,** and its chloro-derivatives (GUYOT and STAEHLING), 1905, A., i, 886.
- Dinaphthyl dihydrorotene, dihydroxy-,** and its anhydride (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- Di- α - and - β -naphthyl dihydrotetrazines** (JUNGAHN and BUNIMOWICZ), 1903, A., i, 130.
- Di- α -naphthyl diketone** (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
- Dinaphthyl dinaphthylene-ethane** (SCHMIDLIN and MASSINI), 1909, A., i, 563.
- Dinaphthyl diphenyl-.** See Diphenyl dinaphthyl-.
- Dinaphthylene dioxide** (NEIL), 1906, A., i, 356.
- and its picrate and tetranitro-derivative (BÜNZLY and DECKER), 1905, A., i, 884.
- disulphide (*naphthanthren*) (FRIES and VOLK), 1909, A., i, 407.
- p*-disulphoxide (HILDITCH), 1910, T., 2591.
- Di-2:3-naphthylene dioxide** (ULLMANN and STEIN), 1906, A., i, 258.
- Dinaphthylenecyclobutane** (*heptacyclene*) (DZIEWOŃSKI, RAPALSKI, and LEYKO), 1912, A., i, 844.
- Dinaphthylenediphenylene-ethane(?) and -ethylene** (GRAEBE), 1905, A., i, 83.

- Dinaphthylene- $\alpha\alpha$ -, $\alpha\beta$ -, and $\beta\beta$ -ketone- $\beta\beta$ -oxide** (SCHMIDLIN and HUBER), 1910, A., i, 832.
- Dinaphthylenethiophen** (DZIEWOŃSKI and BACHMANN), 1903, A., i, 431; (REHLÄNDER), 1903, A., i, 571.
- Dinaphthylenethiophen, α -mono- and $\alpha\alpha$ -di-bromo-** (DZIEWOŃSKI and BACHMANN), 1904, A., i, 84.
- $\alpha\alpha$ -dinitro-** (DZIEWOŃSKI and DOTTA), 1904, A., i, 84.
- Di- α -naphthylethylenediamine, di- α -bromopropionyl derivative, reactions of, with phenol and α - and β -naphthols** (BISCHOFF and SCHTSCHEGOLEW), 1905, A., i, 85.
- Di- β -naphthylethylenediamine, di- α -bromopropionyl derivative, reactions of, with phenol and α - and β -naphthols** (BISCHOFF and SOLOWEITSCHIK), 1905, A., i, 86.
- Di- α - and - β -naphthylethylenediamines, di- α -bromo-*n*- and -*iso*-butyryl derivatives, reactions of, with phenol and α - and β -naphthols** (BISCHOFF), 1905, A., i, 86.
- di- α -bromoisovaleryl derivatives, reactions of** (BISCHOFF), 1905, A., i, 158.
- $\alpha\gamma$ -Di- β -naphthylguanidine, and its β -benzoyl derivative** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- $\alpha\alpha$ -Di- β -naphthylhydrazine** (WIELAND and SÜSSER), 1912, A., i, 905.
- Di- α -naphthylidenehydrazine and its silver salt** (STOLLÉ, MAMPEL, HOLZAPFEL, and LEVERKUS), 1912, A., i, 226.
- dichloride** (STOLLÉ and BAMBACH), 1906, A., i, 710.
- Di- α -naphthylidene-*p*-phenylenediamine, 2:2'-*di*hydroxy-** (SENIER and SHEPHEARD), 1909, T., 1955.
- Dinaphthylene, constitution of** (VESELÝ), 1905, A., i, 237.
- $\alpha\alpha$ -Dinaphthyl ketone** (SCHMIDLIN and MASSINI), 1909, A., i, 562; (BAUER), 1909, A., i, 562.
- $\beta\beta$ -Dinaphthyl ketone, 1:1'-*dinitro*-4:4'-*di*hydroxy-** (BORSCHÉ and BERKHOUT), 1904, A., i, 416.
- $\alpha\beta$ -Dinaphthylmethane** (TSCHITSCHIBABIN), 1911, A., i, 278.
- $\beta\beta$ -Dinaphthylmethane, 1:1'-*dinitro*-4:4'-*di*hydroxy-** (BORSCHÉ and BERKHOUT), 1904, A., i, 416.
- Dinaphthylmethane series** (SCHMIDLIN and MASSINI), 1909, A., i, 561.
- $\alpha\alpha$ -Dinaphthylmethyl chloride** (SCHMIDLIN and MASSINI), 1909, A., i, 562.
- $\alpha\beta$ - and $\beta\beta$ -Dinaphthylmethyl bromide** (TSCHITSCHIBABIN), 1911, A., i, 278.
- α -Dinaphthylmethyl ether** (ZELTNER and TARASOFF), 1910, A., i, 316.
- $\alpha\alpha$ -Dinaphthyl- β -methylpropane- $\alpha\beta$ -diol** (PARRY), 1911, T., 1174; P., 142.
- Di- α - and - β -naphthylmethylsulphines, additive salts of** (KEHRMANN and DUTTENHÖFER), 1906, A., i, 83.
- Dinaphthyl*dinitro*-*m*-phenylenediamine, di-amino-** (NIETZKI and VOLLENBRUCK), 1904, A., i, 1062.
- 2:5-Di- α -naphthyl-1:3:4-oxadiazole** (STOLLÉ and BAMBACH), 1906, A., i, 710.
- Di- α - and - β -naphthyl-*p*-phenylene disulphides** (BOURGEOIS and FOUASSIN), 1911, A., i, 964.
- Di- β -naphthyl-*m*-phenylenediamine** (KNOLL & Co.), 1912, A., i, 345.
- Di- β -naphthyl-*p*-phenylenediamine** (BUCHERER and SEYDE), 1907, A., i, 511.
- D- β -naphthylphthalamide** (TINGLE and LOVEACE), 1907, A., i, 1045.
- Di- α - and - β -naphthylsulphonylhydroxylamine** (FICHTER and TAMM), 1910, A., i, 835.
- Dinitriles, action of aldehydes on** (v. MEYER and KLEINSTÜCK), 1908, A., i, 910.
- action of amyl nitrite on** (LUBLIN), 1904, A., i, 890; 1907, A., i, 213; (v. MEYER), 1907, A., i, 214.
- condensation of, with β -ketocarboxylic esters and unsaturated ketones** (v. MEYER and IRMSCHER), 1908, A., i, 911.
- condensation of with phenols** (v. MEYER), 1908, A., i, 482.
- triazole derivatives from** (v. MEYER and SCHUMACHER), 1908, A., i, 912.
- Dinitritotetramminiridium chloride, bromide, iodide and sulphate** (WERNER and DE VRIES), 1909, A., ii, 151.
- 4:4'-Di(2:6-*dinitro*benzene*azo*)-*azoxy*-benzene** (BORSCHÉ and RANTSCHKEFF), 1911, A., i, 331.
- Di-*o*-, -*m*-, and -*p*-nitrobenzyl disulphides, preparation of** (PRICE and TWISS), 1908, T., 1403; P., 185.
- Dinitro-compounds, yellow, red, green, violet, and colourless salts from** (HANTZSCH, BORCHERS, HEDLEY, and SALWAY), 1907, A., i, 500.
- aromatic, ammonium and sodium sulphides as partial reducing agents for** (BRAND), 1907, A., i, 119.
- o*- and -*p*-, aromatic, reduction of** (MEISENHEIMER and PATZIG), 1906, A., i, 642.
- Janovsky's reaction for** (REITZENSTEIN and STAMM), 1910, A., ii, 358.

- N-Di-m-nitrophenylpiperazine** (BORSCHE and TITSINGH), 1908, A., i, 104.
- Dinitrosaclys.** See Glyoximeperoxides.
- Dinormenthadiene**, synthesis of (MATSUBARA and PERKIN), 1905, T., 668.
- Dicyclooctadiene** (WILLSTÄTTER and VERAGUTH), 1905, A., i, 515.
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- Dioctylacetic acid.** See α -Octyldecoic acid.
- Di-n-octyl ketone p-nitrophenylhydrazone** (PICKARD and KENYON), 1912, T., 629.
- Diolefines**, preparation of (BJELOUSS), 1910, A., i, 706.
- Dioleostearin** (PARTHEIL and FÉRIÉ), 1904, A., i, 5.
- Dionine.** See Morphine ethyl ether.
- Donium ring systems**, conjugated (DECKER), 1906, A., i, 874.
- Diopside**, a peculiar, from Moravieza, Hungary (WEINSCHENK), 1904, A., ii, 50.
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- Dioscine** and its acetyl derivative (HONDA), 1904, A., i, 761.
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- Dioscorea batatas** mucilage from (OSHIMA and TADOKORO), 1912, A., ii, 381.
- Dioscorea macabiha**, composition of the tubercle of, from Madagascar (BOURQUELOT and BRIDEL), 1909, A., ii, 186.
- Dioscorea tokoro makino**, saponin substances from (HONDA), 1904, A., i, 761.
- Dioscorine** and its salts (GORTER), 1911, A., i, 222, 561.
- Diosphenol.** See Buchu-camphor.
- Dioxalosuccinonitrile**, hydrates and diethyl ester with potassium and copper salts (WISLIGENUS and ELVERT), 1910, A., i, 159.
- Dioxalylsuccinic acid**, ethyl ester, products of hydrolysis of (BLAISE and GAULT), 1909, A., i, 134.
- s-Dioxanilide**, *p*-mono- and 2:4-di-chloro- (CHATTAWAY and LEWIS), 1906, T., 158; P., 18.
- Dioxides**, new kind of (MARINO), 1908, A., ii, 106.
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- Dioxime**, $C_{11}H_{18}O_2N_2Br$, from *p*-bromophenyl α -bromoisobutyl ketone and potassium hydroxide (KÖHLER), 1909, A., i, 394.
- Dioximes** and similar compounds (TSCHUGAEFF), 1906, A., i, 984.
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- α -Dioximes**, preparation of (LOCQUIN), 1905, A., i, 19.
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- Dioximidosuccinic acid**, ethyl ester (WAHL), 1906, A., i, 624.
- Dioximines** (TSCHUGAEFF), 1905, A., i, 743; 1906, A., i, 814.
- Dioximino-** See under the parent Substance.
- Dioxindole** and its benzoyl derivatives (HELLER), 1904, A., i, 417.
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- Dioxindole**, *N*-hydroxy- (*trioxindole*), and its *N*-benzoyl derivative (HELLER and SÖLLING), 1909, A., i, 183.
- 1:2-Dioxindole** and its 1-acetyl and 1-benzoyl derivatives (REISSERT), 1909, A., i, 51.
- Dioxindoles**, preparation of (KALLE & Co.), 1910, A., i, 337.
- Dioxyabietic acid** from colophony (FAHRION), 1907, A., i, 329.
- Di-p-oxybenzoyl-p-oxybenzoic acid** (FISCHER and FREUDENBERG), 1910, A., i, 266.
- 3:4-Dioxybenzylidenemalononic acid carbamate.** See 3:4-Carbonyldioxybenzylidenemalononic acid.
- Dioxidiethoxydimethylhydripyrimidine.** See Diethoxydimethylhydriuracil.
- 2:6-Dioxy-8-dimethylamino-7-methylpurine** (FORSCHBACH and WEBER), 1907, A., i, 379.
- 2:6-Dioxy-1:3- and -3:8-dimethylazapurines**, 9-hydroxy- (SACHS and MEYERHEIM), 1909, A., i, 65.
- 2:6-Dioxy-1:3-dimethylazapurine-8-carboxycarbamide**, 9-hydroxy- (SACHS and MEYERHEIM), 1909, A., i, 66.
- 2:6-Dioxy-1:3-dimethylazapurine-8-carboxylic acid**, 9-hydroxy- (SACHS and MEYERHEIM), 1909, A., i, 65.
- 2:6-Dioxy-3:4- and -1:4-dimethylhydripyrimidine.** See α - and β -Dimethyluracil.

- 2:6-Dioxy-1:3-dimethylpiaselenolpurine** (SACHS and MEYERHEIM), 1909, A., i, 66.
- 2:8-Dioxy-6:9-dimethylpurine** (JOHNS), 1912, A., i, 589.
- 2:6-Dioxy-1:3-dimethylpurine-7-diazobenzenesulphonic acid** (BURIÁN), 1904, A., i, 355.
- 2:6-Dioxy-3:4- and -1:4-dimethyltetrahydropyrimidine.** See α - and β -Dimethyldihydrouracil.
- Dioxyethylene,** constitution of, and its salts (PATERNO and SPALLINO), 1907, A., i, 274.
- 2:6-Dioxyhexahydropyrimidine-5-acetamide, 4:5-dibromo-, and its picrate** (JOHNSON and AMBLER), 1911, A., i, 576.
- Dioxymethylene.** See Methylene-dioxy.
- 2:8-Dioxy-1-methylpurine** (JOHNS), 1912, A., i, 589.
- 2:8-Dioxy-6-methylpurine** (JOHNS), 1909, A., i, 192.
- 2:8-Dioxy-9-methylpurine** (JOHNS), 1911, A., i, 507.
- Dioxy-2-methylthiophen** (LANFRY), 1911, A., i, 1009.
- 2:8-Dioxyurine and its salts** (JOHNS), A., i, 242.
- 2:6-Dioxyurine-7-diazobenzenesulphonic acid** (BURIÁN), 1904, A., i, 354.
- Dioxyquinonebistriazen.** See *p*-Benzoquinonebistriazen, dihydroxy-.
- Dioxyquinonepyrins.** See Diketotetrahydrobenzodiazine.
- Dioxysantonin** (ANGELI and MARINO), 1908, A., i, 543.
- 2:6-Dioxy-1:3:8:9-tetramethylazipurine** (SACHS and MEYERHEIM), 1909, A., i, 65.
- Dioxythiocarbonic acid,** methyl, *n*-propyl, *isobutyl*, amyl and benzyl esters (RAGG), 1910, A., i, 154.
- s-Dioxythionaphthen and its dibromide and nitro-** (LANFRY), 1912, A., i, 293.
- Dioxythiophen** (LANFRY), 1911, A., i, 740.
- 2:6-Dioxytrimethylazipurines and their acetyl and hydroxy-derivatives** (SACHS and MEYERHEIM), 1909, A., i, 65.
- Dioxy-** See also Diketo-.
- $\alpha\gamma$ -Dipalmitin and its α - and β -acetyl derivatives,** synthesis of (GRÜN), 1905, A., i, 562.
- Dipalmito- α -chlorohydrin,** synthesis of (GRÜN), 1905, A., i, 562.
- s-Dipalmitylhydrazine,** conversion of, into heterocyclic compounds (STOLLÉ and DELLSCHAFT), 1904, A., i, 697.

- Dipentadecyl-oxadiazole and -thiodiazole** (STOLLÉ and DELLSCHAFT), 1904, A., i, 697.
- Dicyclopentadiene and its nitroso-chlorides and additive salts** (WIELAND), 1906, A., i, 417.
- action of nitrous gas on** (RULE), 1908, T., 1560; P., 175.
- compounds of mercuric chloride with alcoholic solutions of** (HOFMANN and SEILER), 1906, A., i, 786.
- compounds of, with platinous chloride** (HOFMANN and v. NARBUTT), 1908, A., i, 519.
- pyridinium bromide and chloride,** nitroso- (RULE), 1906, T., 1342; P., 235.
- halogen-nitroso-derivatives and their conversion into oxime derivatives** (RULE), 1906, T., 1340; P., 235.
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- Dicyclopentadiene, dinitro-, and its dibromide and nitro-oxime, and ψ -nitrosite** (WIELAND and STENZL), 1908, A., i, 519.
- Dicyclopentadienebenzoquinone and its derivatives** (ALBRECHT), 1906, A., i, 676.
- Dicyclopentadienenitrolpiperidine and its salts and reduction** (RULE), 1906, T., 1343; P., 235.
- p*-Dipentamethyleneindolylmethane** (BORSCHÉ and KIENITZ), 1910, A., i, 782.
- $\alpha\gamma$ -Di-2-cyclopentanoneacetoacetic acid,** ethyl ester, and its semicarbazone (KÖRTZ and SCHÜLER), 1907, A., i, 60.
- Dipentecosylcarbinol and its acetate** (EASTERFIELD and TAYLOR), 1911, T., 2202; P., 279.
- Dipentene, synthesis of, and its dihydrochloride, tetrabromide, and nitrosochloride** (PERKIN), 1904, T., 654; P., 86.
- and its derivatives, constitution of** (SEMMLER), 1907, A., i, 145, 329; (WALLACH), 1907, A., i, 229.
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- boiling point and nature of** (WALLACH), 1907, A., i, 228.
- isomeric change of *l*-pinene into** (SMIRNOFF), 1909, A., i, 942.
- Dipentene, chlorocycano-** (LAPWORTH), 1906, T., 956.
- Dipentene nitrosoazide and its phenyl-carbamyl derivative** (FORSTER and VAN GELDEREN), 1911, T., 2062; P., 195.

- 2:5-Dicyclopentylcyclopentanol** (WALLACH and OST), 1912, A., i, 569.
- 1:3-Dicyclopentyl-2-cyclopentanone** and its derivatives (WALLACH and OST), 1912, A., i, 569.
- 1:3-Dicyclopentyl- Δ^1 -cyclopentene** (WALLACH and OST), 1912, A., i, 569.
- Dipeptide**, $C_{11}H_{20}O_3N_2$, from ethyl 4-amino-1-methylcyclohexane-4-carboxylate and *d*-alanyl chloride (SKITA and LEVI), 1908, A., i, 885.
- $C_{16}H_{28}O_3N_2$, from the hydrolysis of ethyl-4-amino-1-methylcyclohexane-4-carboxylate (SKITA and LEVI), 1908, A., i, 886.
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- Dipeptides**, formation of, by the hydrolysis of proteins (FISCHER and ABDERHALDEN), 1906, A., i, 718.
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- 2:2-Diperimidyl** (SACHS), 1909, A., i, 428.
- Diphenacyl** (*diphenyl ethylene diketone*), halogen derivatives, action of silver acetate on (PAAL and SCHULZE), 1903, A., i, 709.
- bromo- and chloro-derivatives and their additive products (PAAL and SCHULZE), 1903, A., i, 707.
- iodo-derivatives, and their additive products (PAAL and SCHULZE), 1903, A., i, 708.
- Diphenacyl**, α - and β -bromo-, formula of, and β -hydroxy- (EVANS), 1906, A., i, 270.
- ciano- (PAAL and SCHULZE), 1903, A., i, 709.
- Diphenacys**, halogen-constitution of the so-called (WIDMAN), 1909, A., i, 822.
- Diphenacylacetic acid** (*$\beta\beta$ -dibenzoyliso-butyric acid*), formation of (BOUGAULT), 1908, A., i, 796.
- Diphenacylamine** and its additive salts and nitroso-derivative (GABRIEL and LIECK), 1908, A., i, 466.
- hydriodide (TUTIN), 1910, T., 2521; P., 244.
- Diphenacylamine**, *pp'*-*di*hydroxy-, and its salts (TUTIN), 1910, T., 2522; P., 244.
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- Diphenacylaniline** (v. BRAUN), 1908, A., i, 629.
- Diphenacyl-*p*-anisidine** (BUSCH and HEFELE), 1911, A., i, 584.
- s-Diphenacylomethylamine** and its additive salts (SCHÄFER and TOLLENS), 1906, A., i, 574.
- Diphenanthracridine**, preparation of (AUSTIN), 1908, T., 1764; P., 200.
- Diphenanthraphenazine ketone** (CONSONNO), 1904, A., i, 677.
- Di-9-phenanthrylamine** (SCHMIDT and LUMPP), 1910, A., i, 313.
- Di-9(10)-phenanthrylamine**, 3:3-*di*-bromo- (SCHMIDT and LUMPP), 1910, A., i, 313.
- s-Di-9-phenanthrylthiocarbamide** (SCHMIDT and STROBEL), 1903, A., i, 692.
- Diphenazone** (ULLMANN and DIETERLE), 1904, A., i, 269.
- Di-*o*-phenetidinedisulphonic acid**, preparation of (AKTIEN GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 950.
- $\gamma\gamma$ -Di-*p*-phenetidino-butane- $\alpha\beta$ -dicarboxylic acid**, ethyl ester, and phenetidine of (ROSSI), 1906, A., i, 983.
- Di-*p*-phenetidylmethane**, dibenzoyl derivative (HELLER and KÜHN), 1904, A., i, 943.
- Di-*p*-phenetidylpropylene**, β -bromo- (BUSIGNES), 1910, A., i, 668.
- Diphenetole**, sulphonation of (MOIR), 1907, T., 1308.
- 4:4'-Diphenetole-3-mono- and -3:3'-disulphonic acids** (MOIR), 1906, P., 259.
- Diphenetylphenylsulphonium** and its platinichloride (SMILES and LE ROSIGNOL), 1906, T., 705; P., 24, 87.

- Diphenetyl-**. See also Diethoxydiphenyl-.
- Diphenic acid**, preparation of (MEYER and SPENGLER), 1905, A., i, 219.
- amino- and nitro-derivatives (SCHMIDT and AUSTIN), 1904, A., i, 69; (SCHMIDT and KÄMPF), 1904, A., i, 70, 71.
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- Diphenic acid**, 4:4'- and 6:6'-diamino-, 6-amino-6'-hydroxy-, and 4-mono- and 4:4'-di-hydroxy-, and its diacetyl derivative (SCHMIDT and SCHALL), 1906, A., i, 23.
- p*-chloro- (SCHMIDT and SCHALL), 1907, A., i, 26.
- 2-chlorodinitro- (SCHMIDT and SAUER), 1912, A., i, 35.
- dinitroamino- (SCHMIDT and SÖLL), 1908, A., i, 997.
- Diphenic anhydride**, condensation of, with toluene (PICK), 1905, A., i, 68.
- Diphenic chloride**, 4:4'-dinitro- (SCHMIDT and KÄMPF), 1904, A., i, 71.
- Diphenol** and its diacetate (NORRIS, MACINTYRE, and CORSE), 1903, A., i, 372.
- 2:2'-Diphenol** (2:2'-dihydroxydiphenyl), *p*-toluenesulphonyl derivative (ULLMANN), 1904, A., i, 727.
- 2:2'-Diphenol**, 3:3'-dibromo-5:5'-dinitro-, 3:3'- and 5:5'-dichloro-, dichlorobromo-, dichlorodibromo-, and 3:3'-dichloro-5:5'-dinitro- (ROBERTSON and BRISCOE), 1912, T., 1972.
- 3:3'-Diphenol** (3:3'-dihydroxydiphenyl), and its dibenzoate (SCHULTZ and KOHLHAUS), 1906, A., i, 818.
- benzoate of (ULLMANN), 1904, A., i, 727.
- 4:4'-Diphenol** (4:4'-dihydroxydiphenyl) and its dibenzoate and di-, tri-, and tetra-sulphonic acids and their salts and its nitration (MOIR), 1906, P., 259; 1907, T., 1305.
- oxidation of (WILLSTÄTTER and BENZ), 1906, A., i, 997.
- 4:4'-Diphenol**, 3'-bromo-3-nitro-, 5:5'-dibromodinitro-, and di- and tetra-nitro- (MOIR), 1907, T., 1310.
- 3-mono- 3:3'-di-, and 3:3':5(?)-trichloro- (CAIN), 1903, P., 284; 1904, T., 10.
- 3:3'-dichloro- (CAIN), 1903, T., 691; P., 137.
- p*-Diphenoldimethylmethane. See $\beta\beta$ -Diphenylpropane, *pp'*-dihydroxy-.
- Diphenolisatin** (*phenolisatin*), oxidation of, and its bromo- and chloro-derivatives and their acetates (LIEBERMANN and DANAILA), 1907, A., i, 976.
- Diphenolmethane**. See Diphenylmethane, dihydroxy-.
- Diphenoperazine**, dichloro-, and its chloride (WIELAND and SÜSSER), 1911, A., i, 571.
- Dipheno-quinhydrone** and -quinone and its di-imine (WILLSTÄTTER and KALB), 1905, A., i, 361.
- "**Diphenoquinone**, tetrabromo-," action of reducing agents on (MOIR), 1907, P., 308.
- Diphenoquinone** dichlorodi-imine, 2:2'- and 2:4'- (SCHLENK, KELLER, and KNORR), 1909, A., i, 808.
- p*-Diphenoquinone-chloroimine and -dichlorodi-imine (SCHLENK and KNORR), 1909, A., i, 37.
- Diphenoquinone**-di- and -tetra-methyl-di-imonium salts (WILLSTÄTTER and KALB), 1904, A., i, 1050.
- 9:10-Diphenoxy-9:10-isoamlylenedi-hydroanthracene** (JÜNGERMANN), 1905, A., i, 795.
- 1:4-Diphenoxyanthraquinone** and its dinitro-derivative (WALSH and WEIZMANN), 1910, T., 688.
- 1:5-Diphenoxyanthraquinone** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 797.
- 1:2-Diphenoxybenzene**. See Catechol diphenyl ether.
- 1:3-Diphenoxybenzene**. See Resorcinol diphenyl ether.
- 1:4-Diphenoxybenzene**. See Quinol diphenyl ether.
- Diphenoxy-*p*-benzoquinone**, diiodo- (TORREY and HUNTER), 1912, A., i, 475.
- α -**Diphenoxydecane** (V. BRAUN and TRÜMLER), 1910, A., i, 26; (V. BRAUN, DEUTSCH, and SCHMATLOCH), 1912, A., i, 433.
- 5:8-Diphenoxy-1:2-, 1:3-, and 1:4-dimethylanthraquinone** (HARROP, NORRIS, and WEIZMANN), 1909, T., 1315.
- Diphenoxydiphenyl ether** (ULLMANN and SPONAGEL), 1907, A., i, 39.
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- Diphenoxydipropanol oxide** (FOURNEAU), 1910, A., i, 246.
- α -**Diphenoxydodecane** (V. BRAUN and TRÜMLER), 1910, A., i, 26.
- Diphenoxyethyl ether** (WOHL and BERTHOLD), 1910, A., i, 620.
- 9:9-Diphenoxyfluorene** (SMEDLEY), 1905, T., 1252; P., 221.

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α -Diphenoxypentane (V. BRAUN and STEINDORFF), 1905, A., i, 341.

9:10-Diphenoxy-9-phenyldihydroanthracene, 10-hydroxy-, and its acetyl derivative (LIEBERMANN and LINDENBAUM), 1905, A., i, 522.

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Diphenoxypropylcyanamide (V. BRAUN), 1909, A., i, 507.

Diphenoxyisopropylphosphorous acid, salts (BOYD), 1903, T., 1137.

α -Diphenoxyundecane (V. BRAUN and DANZIGER), 1912, A., i, 598.

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4-amino-2'-hydroxy-, and 4-amino-4'-hydroxy-, and derivatives of the latter (BAMBERGER), 1912, A., i, 691.

5-mono- and 3:5-di-amino-2-hydroxy-, and mono-, di-, and tri-nitro-2-hydroxy-derivatives and their ethers (HILL and HALE), 1905, A., i, 200.

3:3'-diamino-6:6'-dihydroxy-, and its hydrochloride, and 3:3'-dinitro-6:6'-dihydroxy-, and its methyl and ethyl ethers (HALE and ROBERTSON), 1908, A., i, 635.

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4-nitro-4'-amino-, and its acetyl derivative (WILLSTÄTTER and KALB), 1906, A., i, 996.

4-nitroso-4'-amino-, acetyl derivative (CAIN), 1909, T., 717; P., 123.

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*di*bromide and *dichloride*, and 4:4'-*di*bromo, *di*bromide and *perbromide*, and 4:4'-*dichloro*-, *dichloride* (FRIES and VOGT), 1911, A., i, 538.

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di-o-amino-, dibenzoyl derivative (MÖHLAU, BEYSSCHLAG, and KÖHRES), 1912, A., i, 212.

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2:4:2':4'-*tetra*amino- and 2:2'-*di*nitro-4:4'-*di*amino- (MÜLLER), 1907, A., i, 89.

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4:6:4':4'-*tetra*bromo- and -chloro-2:2'-*di*nitro- (BLANKSMA), 1908, A., i, 147.

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4:4'-*di*nitro- (WOHLFAHRT), 1903, A., i, 203.

2:2'-*di*nitro-4:4'-*di*amino- (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), 1906, A., i, 323.

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4:4'-*di*bromo-, and 4:4'-*dichloro*-(FRIES and VOGT), 1911, A., i, 538.

Diphenyl sulphoxide, *p*-iodo- (WILLGERODT and KLINGER), 1912, A., i, 256.

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Diphenyl series, studies in the (CAIN and MAY), 1910, T., 720; P., 71; (CAIN, COULTHARD, and MICKLETHWAIT), 1912, T., 2298; P., 277; (CAIN and BRADY), 1912, T., 2304; P., 285.

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9:10-Diphenylacenaphthene glycol (BESCHKE and KITAJ), 1909, A., i, 917.

9:9-Diphenylacenaphthenone (BESCHKE and KITAJ), 1909, A., i, 918.

9:9-Diphenylacenaphthenone, 9:9-*di*-chloro- (ZSUFFA), 1910, A., i, 862.

Diphenylacetaldehyde and its azine, benzoylhydrazone, and semicarbazone (KLAGES and KESSLER), 1906, A., i, 499.

Diphenylacetamide (JAPP and KNOX), 1905, T., 681; P., 153.

Diphenylacetamide, hydroxy- (BUCHERER and GROLÉE), 1906, A., i, 351.

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- Diphenylacetic anhydride**, α -chloro- (STOLLÉ), 1910, A., i, 738.
- Diphenylacetone** and its oxime, phenylhydrazone, and semicarbazone (STOERMER, SCHENCK zu SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 583.
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- 4:6-Diphenylacetylenediureine**, 1-chloro-, 1-chloro-3-sodium-, and 1:3:7:9-tetrachloro- (BILTZ and BEHRENS), 1910, A., i, 590.
- Diphenylacetylhydrazide** (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- Diphenylacetylphenylimino-chloride** (STAUDINGER, CLAR, and CZAKO), 1911, A., i, 625.
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- 5-Di-m-phenylacridinyl ether** (LANDAUER), 1904, A., i, 928.
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- $\beta\beta$ -Diphenylacrylic acid. See β -Phenylcinnamic acid.
- Diphenyladipamide**, *di-o*-amino-, and its hydrochloride (MEYER and JAEGER), 1906, A., i, 766.
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- $\beta\gamma$ -Diphenyladipic acid, γ -hydroxy- (BESCHKE, KÖHRES, and STOLL), 1912, A., i, 890.
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- Diphenyladipic acids**, comparison of, with truxillic acids (JESSEN), 1907, A., i, 60.
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2:3:5:4'-tetrachloro-, and pentabromo- (JACOBSON, BARTSCH, LOEB, and STEINBRECK), 1909, A., i, 684.

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2:3:5:4'-tetrachloro-4-amino-, and its o-hydroxybenzylidene derivative, and 2:3:5:4'-tetrachloro-4-hydroxy- (JACOBSON, BARTSCH, and STEINBRECK), 1909, A., i, 682.

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2:4-Diphenyldiaminobenzophenone, 3:4:5-trihydroxy- (EHRMANN), 1911, A., i, 459.

- 1-Diphenylamino-3:6-dibenzhydryl-1:2-dihydro-1:2:4:5-tetrazine**, acetyl derivative (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- 1-Diphenylamino-2:5-dibenzhydryl-1:3:5-triazole**, acetyl derivative (STOLLÉ and SCHMIDT), 1912, A., i, 1036.
- 3:7-Diphenylamino-4:6-diketo-2:8-dimethyltetrahydro-1:3:7:9-naphthetetrazine** (BOGERT and KROFF), 1909, A., i, 844.
- Diphenyl-4:4'-diaminodiphenylamine**, *di-p*-hydroxy- (FARBWERKE FORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 1062.
- Dipenyl-diaminodiphenylmethane**, *di-p*-amino- and its hydrochloride (STRAUS and BORMANN), 1910, A., i, 282.
- Diphenylaminofuchsonophenylimine** and its chloride and benzoyl derivative (v. BAEYER and VILLIGER), 1904, A., i, 787.
- Diphenylaminoguanazole** and its picrate and hydrochloride (PELLIZZARI), 1911, A., i, 338.
- Diphenyl-diaminoguanidine** hydrobromide and picrate (PELLIZZARI), 1907, A., i, 874.
- Diphenyl- α -diaminohehexane**, and its derivatives (v. BRAUN), 1910, A., i, 821.
- Diphenyl-*p*-aminotolylmethane** and its sulphate and benzoyl derivative (BUSCH and RINCK), 1905, A., i, 520.
- o*-Diphenylaminotridiphenylamine** (WIELAND and SÜSSER), 1911, A., i, 571.
- 4:5-Diphenyl-2-amyglyoxaline** and its hydrochloride, platinichloride, and methyl ether (RADZISZEWSKI and BUKOWSKA), 1909, A., i, 422.
- Diphenylisoamylphosphine sulphide** (ARBUSOFF), 1911, A., i, 100.
- Diphenylisoamylthiocarbamide** (WARUNIS), 1911, A., i, 39.
- Diphenylanilinoacetanilide** (KLINGER and NICKELL), 1912, A., i, 699.
- Diphenylanilinomethane** and its hydrochloride (BUSCH), 1904, A., i, 664.
- 1:4-Diphenyl-3:5-endoanilo-4:5-dihydro-1:2:4-triazole** (*nitron*) and its salts (BUSCH), 1905, A., i, 307; (BUSCH and MEHRTENS), 1906, A., i, 115.
- as a microchemical reagent (VISSER), 1907, A., ii, 394.
- as a test for nitrates (BUSCH and MEHRTENS), 1906, A., i, 118.
- use of, in estimating nitrates (BUSCH), 1905, A., ii, 282, 418; (GUTBIER), 1905, A., ii, 418; (VASILIEFF), 1910, A., ii, 1109.
- 1:4-Diphenyl-3:5-endoanilo-4:5-dihydro-1:2:4-triazole** (*nitron*), use of, for estimating nitrates in plants and soils (LITZENDORFF), 1908, A., ii, 130.
- estimation of nitric acid with (PAAL and GANGHOFER), 1909, A., ii, 759.
- platinocyanide (LEVY), 1907, A., i, 689.
- 1:4-Diphenyl-3:5-endoanilo-4:5-dihydro-1:2:4-triazole**, *p*-(1)-bromo-, and its salts (BUSCH and BRANDT), 1907, A., i, 260.
- Diphenyl-*p*-anisidine** (WIELAND and WECKER), 1910, A., i, 243.
- Diphenyl-*o*-anisylbenzamidine** and its picrate (v. BRAUN), 1904, A., i, 689.
- Diphenyl-*o*- and -*m*-anisylcarbinols** (v. BAEYER), 1907, A., i, 759.
- Diphenyl-*p*-anisylcarbinolanilide** (v. BAEYER and VILLIGER), 1904, A., i, 309.
- 2:4-Diphenyl-1-*o*-anisyl-dihydro-1:2:3-triazole** (BUSCH and HEFELE), 1911, A., i, 584.
- 1:3-Diphenyl-4-anisylidenehydantoin**, 2-thio- (WHEELER and BRAUTLECHT), 1911, A., i, 502.
- Diphenyl-*o*-anisylmethane** (v. BAEYER), 1907, A., i, 759.
- Diphenyl-*p*-anisylmethane** and its derivatives (v. BAEYER, VILLIGER, and HALLENSLEEN), 1903, A., i, 813.
- 3:4-Diphenyl-5-anisylphenol** and its acetate (GARNER), 1904, A., i, 253.
- Diphenyl-*p*-anisylpyrrylmethane** (KHOTINSKY and PATZEWITCH), 1909, A., i, 830.
- s*-9:10-Diphenylanthracene** (HALLER and GUYOT), 1904, A., i, 659.
- Diphenylanthranilic acid**. See Triphenylamine-*o*-carboxylic acid.
- $\alpha\beta$ -Diphenyl-2:3-anthraquinoxalinequinone** (SCHOLL and KAČER), 1905, A., i, 89.
- 9-Diphenylanthrone**, hydroxy-, and its acetyl derivative (LIEBERMANN and LINDENBAUM), 1906, A., i, 25.
- 9:9-Diphenyl-10-anthrone**, 2:4'-dihydroxy-, and its diacetyl derivative (LIEBERMANN and LINDENBAUM), 1905, A., i, 522.
- $\alpha\alpha$ -Diphenyl-*l*-arabitol** and its $\beta\gamma\delta\epsilon$ -tetrabenzoyl derivative (PAAL and KINSCHER), 1912, A., i, 31.
- Diphenyl-arsine** tribromide and iodide and -arsinic acid (DEHN and WILCOX), 1906, A., i, 152.
- Diphenylarsinic acid**, *di-p*-amino-, and its diacetyl derivative, and *di-p*-hydroxy- (BENDA), 1908, A., i, 747.

- 4:4'-Diphenylazodiphenyl (ULLMANN), 1904, A., i, 729.
- s-Diphenylazomethane. See ω -Azotoluene.
- 1:3-Diphenylbarbituric acid and its acetyl derivative and 5-amino- and 5-isonitroso- and its metallic and amine salts, and its reactions (WHITELEY), 1906, P., 200; 1907, T., 1338.
- 5:5-dibromo-, and its condensation with phenylhydrazine or its β -substituted derivatives (WHITELEY), 1907, T., 1347; P., 180.
- 5-isonitroso-, pantachromism of salts of (HANTZSCH and ROBISON), 1910, A., i, 196.
- Diphenyl bases, constitution of, derived from *p*-substituted hydrazo-compounds (JACOBSON and LOEB), 1904, A., i, 203.
- Diphenylbenzamide (v. MEYER and NICOLAUS), 1911, A., i, 121.
- chloride (v. BRAUN), 1904, A., i, 688.
- 1:5-Diphenylisobenzdithiazole (*dibenz-
enyl-2:5-disulphydro-p-diaminobenz-
ene*) (GREEN and PERKIN), 1903, T., 1207; P., 206.
- p*-Diphenylbenzene, 2:4'-diamino- and its derivatives (DZIURZYŃSKI), 1908, A., i, 696.
- 1:5-Diphenyl-4-benzeneazopyrazole-3-carboxylic acid, ethyl ester (BÜLOW), 1904, A., i, 623.
- Diphenylbenzenylamidine (BUSCH and HOBEIN), 1907, A., i, 1075.
- Diphenylbenzenylaminoamidine and its isomeride (WHEELER and JOHNSON), 1904, A., i, 628.
- Diphenylbenzenylhydrazidine, constitution of (BUSCH and RUPPENTHAL), 1911, A., i, 86; (WHEELER and JOHNSON), 1911, A., i, 166.
- Diphenylbenzfulvene (GRIGNARD and COURTOT), 1911, A., i, 193.
- Di-*p*-phenylbenzhydrol (SCHLENK, RENNING, and RACKY), 1911, A., i, 596.
- Diphenylbenzidine (USCHAKOFF), 1907, A., i, 361.
- and its dicarboxylic acid and sulphone (KADIERA), 1905, A., i, 934.
- and di-*p*-nitroso-, and their derivatives (KEHRMANN and MICEWICZ), 1912, A., i, 1021.
- Diphenylbenzidine, *p*-nitro- (WIELAND and ROSEEU), 1912, A., i, 906.
- di-*p*-nitro- (WIELAND, ROSEEU, and GAMBARJAN), 1912, A., i, 906.
- 1:2-Diphenylbenziminazole and its hydrochloride (WOLFF), 1912, A., i, 1028.
- 1:2-Diphenylbenziminazole, 5-amino-, and its acetyl derivative, and 5-nitro-, and its salts (v. WALTHER and KESLER), 1906, A., i, 900.
- 1:2-Diphenylisobenzofuran and its polymeride (GUYOT and CATEL), 1907, A., i, 76.
- Diphenylbenzocycloheptadienone (THIELE and WEITZ), 1910, A., i, 854.
- Diphenylbenzocycloheptanol (THIELE and WEITZ), 1910, A., i, 855.
- Diphenylbenzocycloheptanone (THIELE and WEITZ), 1910, A., i, 854.
- 2:3-Diphenylbenzopyranol and its methyl and ethyl ethers (DECKER and v. FELLEBERG), 1909, A., i, 117.
- chloride hydrochloride (GOMBERG and CONE), 1910, A., i, 58.
- 2:4-Diphenylbenzopyranol chloride hydrochloride, 7-hydroxy- (GOMBERG, CONE, and WINTER), 1910, A., i, 59.
- 2:3-Diphenylbenzopyryonium ferri-chloride (DECKER and v. FELLEBERG), 1909, A., i, 117.
- Diphenylbenzoquinone (FICHTER and SULZBERGER), 1904, A., i, 325.
- p*-Diphenylbenzoquinone, dihydroxy- (FICHTER and WEISS), 1908, A., i, 659.
- ω -Diphenylbenzoquinonemethane phenylimide and its salts (v. BAEYER and VILLIGER), 1904, A., i, 309.
- 4:5-Diphenyl-1-benzyl-3:5-endoanilo-4:5-dihydro-1:2:4-triazole and its nitrate (BUSCH and BRANDT), 1907, A., i, 260.
- 1:3-Diphenyl-5-benzyl- and -5-benzylidene-barbituric acids (WHITELEY), 1906, P., 200; 1907, T., 1342.
- $\alpha\delta$ -Diphenyl- β -benzyl- Δ^a -butylene (ORECHOFF and KONOWALOFF), 1912, A., i, 436.
- Diphenylbenzylcarbinol (HELL and WIEGANDT), 1904, A., i, 490.
- and its chloride (KLAGES and HEILMANN), 1904, A., i, 488.
- 1:5-Diphenyl- ψ -benzylidihydrotriazole, endothio- (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 531.
- 2:6-Diphenyl-1-benzyl-1-ethylpiperidinium iodide (SCHOLTZ), 1911, A., i, 327.
- $\alpha\zeta$ -Diphenyl- ϵ -benzyl- $\Delta^{\alpha\gamma}$ -hexadien- ϵ -ol and its tetrabromide (REYNOLDS), 1911, A., i, 861.
- $\alpha\zeta$ -Diphenyl- γ -benzyl- Δ^a -hexen- ϵ -one and its dibromide (REYNOLDS), 1911, A., i, 861.
- 2:3-Diphenyl-1-benzylhydroxyamidine and its hydrochloride (LEY and HOLZWEISSIG), 1903, A., i, 282.

- Diphenylbenzylidenacetophenone.** See Phenyl diphenylstyryl ketone.
- α -Diphenylbenzylidenebenzylhydrazidine** (BUSCH and RUPPENTHAL), 1911, A., i, 87.
- α β -Diphenyl- γ -benzylidenebutyrophenone and bromo-** (REIMER and REYNOLDS), 1908, A., i, 989.
- 1:3-Diphenyl-4-benzylidenehydantoin, 2-thio-** (WHEELER and BRAUTLECHT), 1911, A., i, 502.
- Diphenylbenzylidenehydrazine** (MICHAELIS), 1908, A., i, 471; (GOLD-SCHMIEDT), 1908, A., i, 572.
- $\gamma\gamma$ -Diphenyl- α -benzylidenemitaconic acid, and its salts, and anhydride** (STOBBE, K. and P. KOHLMANN, and NAOUM), 1904, A., i, 672.
- 3:4-Diphenyl-5-benzylidene-2-methyl-ene- Δ^3 -cyclopentenone** (GRAY), 1909, T., 2136.
- 3:4-Diphenyl-5-benzylidene- Δ^2 -cyclopenten-1-one-2-ol, isomeric forms of** (GRAY), 1909, T., 2144.
- 1:3-Diphenyl-4-benzylidene-5-pyrazol-one-2'-carboxylic acid** (MICHAELIS and LEO), 1910, A., i, 515.
- 1:3-Diphenyl-5-benzylidene-2-thiobarbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 121.
- α ζ -Diphenyl- β -benzyl- γ -methyl- $\Delta^{\alpha\gamma\epsilon}$ -hexatriene** (REIMER and REYNOLDS), 1912, A., i, 769.
- Diphenylbenzylphosphine oxide** (ARBU-SOFF), 1910, A., i, 803.
- 3:5-Diphenyl-2-benzylpyridine, 4:6-dihydroxy-** (WEDEKIND, HÄUSER-MANN, WEISSWANGE, and MILLER), 1911, A., i, 220.
- 3:5-Diphenyl-1-benzyl-1:4:6-pyrone, and its derivatives** (WEDEKIND, HÄUSER-MANN, WEISSWANGE, and MILLER), 1911, A., i, 219.
- $\alpha\gamma$ -Diphenyl- α -benzylsulphone- β -methylpropan- γ -one** (POSNER), 1904, A., i, 324.
- 1:3-Diphenyl-5-benzyl-2-thiobarbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 122.
- $\alpha\epsilon$ -Diphenyl-1-benzyl- ψ -dithiobiuret** (JOHNSON and ELMER), 1903, A., i, 752.
- Diphenyl- ψ -benzylthiosemicarbazide** (WHEELER and STATIROPOULOS), 1905, A., i, 721.
- Diphenylbidiguanide and its salts** (COHN), 1911, A., i, 929.
- Diphenylbicyclooctane, dihydroxy-, and its derivatives** (GEORGI and VOLLAND), 1912, A., i, 780.
- Diphenylbicyclooctenone, and its semicarbazone** (GEORGI and VOLLAND), 1912, A., i, 781.
- Diphenylbiphenylenemethane** (9:9-*diphenylfluorene*) (ULLMANN and v. WURSTEMBERGER), 1906, A., i, 76.
- hydroxy-, and ether (KIEGL), 1905, A., i, 187.
- Diphenylbis-azo- and -diazo-aminobenzenes** (VIGNON), 1906, A., i, 391.
- Diphenylbisazobisphenylisooxazolone** (MEYER), 1911, A., i, 341.
- Diphenylbisazocresols and their ethers** (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- Diphenyl-4:4'-bisazo- α -hydroxynaphthoic acid** (SIRCAR and WATSON), 1912, A., i, 1038.
- Diphenylbisazo- β -naphthol, 2:2'-dichloro-5:5'-dinitro-** (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), 1911, A., i, 493.
- Diphenylbisazophenol and its ethers** (MEYER and MAIER), 1903, A., i, 870.
- Diphenylbisazophenolsulphonic acids, sodium salts, and their dibenzyl ethers** (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- Diphenylbisdiazonium chloride, and 2-nitro-, compounds of, with antimony trichloride** (MAY), 1912, T., 1039.
- hydrogen sulphate, *tetrabromo-* (JACOBSON, BARTSCH, LOEB, and STEINBRENNCK), 1909, A., i, 684.
- Diphenylbisdiphenylene-ethane** (SCHLENK, HERZENSTEIN, and WEICKEL), 1910, A., i, 469.
- Diphenylbisoxadiazole** (STOLLÉ and MÜNCH), 1905, A., i, 95.
- Diphenylbisthiodiazoles** (STOLLÉ and KIND), 1905, A., i, 96.
- s-Diphenylbiuret** (SCHIFF), 1907, A., i, 206.
- ab-Diphenyl-c-bornyliminnoxanthide** (TSCHUGAEFF), 1905, A., i, 74.
- Diphenylbromoacetanilide** (KLINGER and NICKELL), 1912, A., i, 699.
- Diphenylbromocetyl bromide** (KLINGER and NICKELL), 1912, A., i, 699.
- Diphenylbromocyclobutylcarbinyl methyl ether** (KIJNER), 1911, A., i, 43.
- Diphenylbromocyclohexylmethane** (SCHMIDLIN and v. ESCHER), 1912, A., i, 437.
- Diphenyltetrabromocyclopentanone** (JAPP and MAITLAND), 1904, T., 1479; P., 204.
- 4:5-Diphenyl-1-p-bromophenylpyrazole** (WISLICENUS and RUTHING), 1911, A., i, 304.

- Diphenyl-3:4:5-tribromoquinoxaline** (JACKSON and FISKE), 1903, A., i, 690.
- Diphenyldibromosilicane** (LADENBURG), 1907, A., i, 668.
- $\alpha\delta$ -Diphenyl- $\Delta\gamma$ -butadiene**, addition of nitro-groups to (WIELAND and STENZL), 1908, A., i, 518.
- picrate of** (THIELE and HENLE), 1906, A., i, 572.
- $\alpha\delta$ -Diphenyl- $\Delta\gamma$ -butadiene, α -nitro-** (WIELAND and STENZL), 1908, A., i, 36, 518.
- Diphenylbutadienes**, isomeric, and their bromo-derivatives (STRAUS and MÜLLER), 1906, A., i, 78.
- Diphenylbutadienediamine** and its picrate (WIELAND and STENZL), 1908, A., i, 518.
- $\alpha\delta$ -Diphenylbutadiene- $\beta\gamma$ -dicarboxylic acid.** See Dibenzylidenesuccinic acid.
- Diphenylcyclobutadienedicarboxylic anhydride** (RUHEMANN and MERRIMAN), 1905, T., 1894; P., 225.
- $\alpha\alpha$ -Diphenylbutaldehyde** and its oxime and semicarbazone (TIFFENEAU and DORLENCOURT), 1907, A., i, 130.
- $\alpha\gamma$ -Diphenylbutaldehydecyanohydrin, β -hydroxy-** (SPÄTH), 1912, A., i, 978.
- Diphenylbutane, *di-p*-hydroxy-**, and its dibenzoyl derivative and dimethyl ether (LUNIAK), 1908, A., i, 416.
- $\alpha\beta$ -Diphenylbutane, *l-\alpha\beta*-dihydroxy-** (MCKENZIE and WREN), 1910, T., 479.
- $\alpha\delta$ -dinitro- β -cyano-, α - and β - forms of** (HOLLEMAN), 1905, A., i, 42.
- $\alpha\gamma$ -Diphenylbutane** (STOBBE and POSNJAK), 1910, A., i, 236.
- $\alpha\delta$ -Diphenylbutane, $\beta\gamma$ -dihydroxy-** (STRAUS and MÜLLER), 1906, A., i, 79.
- $\beta\gamma$ -Diphenylbutane**, isomeric forms of (LEPIN), 1912, A., i, 958.
- $\beta\gamma$ -Diphenylbutane, $\beta\gamma$ -dibromo-** (STOBBE and POSNJAK), 1910, A., i, 236; (BESCHKE, KÖHRES, and STOLL), 1912, A., i, 890.
- Diphenylbutanes, $\alpha\alpha$ - and $\alpha\beta$ -** (KLAGES and HEILMANN), 1904, A., i, 488.
- 1:3-Diphenylcyclobutane-2:4-di- α -cyanoacrylic acid**, ethyl and methyl esters (REIMER), 1911, A., i, 447.
- 2:4-Diphenylcyclobutane-1:3-di- α -methylacrylic acid**, and its methyl ester and tetrabromide (MACLEOD), 1910, A., i, 846.
- 1:3-Diphenylcyclobutane-2:4-dione** (STAUDINGER and BEREZA), 1911, A., i, 307.
- $\alpha\alpha$ -Diphenylbutane- $\alpha\gamma\delta$ -triol** (TARASOFF), 1910, A., i, 109.
- $\alpha\delta$ -Diphenyl- $\Delta\beta$ -butene** (STRAUS and MÜLLER), 1906, A., i, 79.
- $\beta\gamma$ -Diphenyl- $\Delta\beta$ -butene- $\alpha\delta$ -dicarboxylic acid, $\alpha\delta$ -dicyano-**, and its potassium and sodium salts (HAWORTH), 1909, T., 486.
- Diphenylbuteninene** and its isomerides, and their bromo-derivatives (STRAUS and MÜLLER), 1906, A., i, 78.
- 1:3-Diphenyl- Δ^1 -cyclobuten-2-ol-4-one** (STAUDINGER and BEREZA), 1911, A., i, 307.
- $\beta\delta$ -Diphenyl- ψ -buten- δ -one.** See Phenyl methylstilbyl ketone.
- $\alpha\delta$ -Diphenyl- $\Delta\beta$ -butinene- $\alpha\delta$ -diol** and its derivatives (DUPONT), 1910, A., i, 379.
- Di- α -phenylbutylamine** and its hydrochloride (BUSCH and LEEFHELM), 1908, A., i, 152.
- $\alpha\gamma$ -Diphenylbutylamine** and its salts (HENRICH), 1907, A., i, 324.
- Diphenyl- ψ -butylcarbinol**, dehydration of (RAMART-LUCAS), 1912, A., i, 449.
- Diphenylcyclobutylcarbinol bromide** (KIJNER), 1911, A., i, 43.
- 3:4-Diphenyl-6-*tert*.-butyl-1:2-diazine** (JAPP and WOOD), 1905, T., 712.
- $\alpha\delta$ -Diphenyl- $\Delta\beta$ -butylene, $\alpha\delta$ -dinitro-** (WIELAND and STENZL), 1908, A., i, 35.
- Diphenylbutylenes, $\alpha\alpha$ - and $\alpha\beta$ -** (KLAGES and HEILMANN), 1904, A., i, 488.
- $\alpha\beta$ -Diphenylbutylene $\alpha\beta$ -glycol** (ACREE), 1905, A., i, 217.
- 4:5-Diphenyl-2-*tert*.-butylfuran** and 3-chloro- (JAPP and MAITLAND), 1904, T., 1497.
- $\alpha\alpha$ -Diphenyl- γ -*tert*.-butyl- γ -hydroxy-butyric acid** and its lactone (JAPP and MAITLAND), 1904, T., 1500.
- $\beta\gamma$ -Diphenyl- α -*tert*.-butyl- γ -hydroxy-butyric acid**, and its lactone (JAPP and MAITLAND), 1904, T., 1501.
- Diphenylcyclobutylidenemethane** and its derivatives (KIJNER), 1911, A., i, 43.
- Diphenylcyclobutylmethane** and dinitro- (KIJNER), 1911, A., i, 43.
- 4:5-Diphenyl-2-*tert*.-butyl-2:5-oxidopyrrole** (JAPP and MAITLAND), 1904, T., 1501.
- Diphenylisobutylphosphine oxide** (ARBUSOFF), 1910, A., i, 803.
- Diphenylisobutylphosphine sulphide** (ARBUSOFF), 1911, A., i, 100.
- 1:5-Diphenyl-3-*tert*.-butylpyrazoline** (AUWERS and VOSS), 1910, A., i, 71.
- Diphenylbutylthiocarbamide** (v. BRAUN and DEUTSCH), 1912, A., i, 694.

- Diphenylbutyramide** (v. MEYER and NICOLAUS), 1911, A., i, 121.
- $\beta\gamma$ -Diphenylbutyramide** (KÖHLER and REIMER), 1905, A., i, 348.
- $\beta\gamma$ -Diphenylbutyric acid**, γ -bromo- (FICHTER and LATZKO), 1907, A., i, 86.
- γ -cyano- (AVERY and McDOLLE), 1908, A., i, 344.
- oxidation and reduction of (AVERY and McDOLLE), 1908, A., i, 796.
- $\gamma\gamma$ -Diphenylbutyric acid** (EYKMAN), 1904, A., i, 669.
- synthesis of (EYKMAN), 1908, A., i, 23.
- $\beta\beta'$ -Diphenylisobutyric acid**, α -*oo*-tri-cyano-, ethyl ester (MITCHELL and THORPE), 1910, T., 2280.
- $\beta\gamma$ -Diphenylbutyrolactone**, α -hydroxy-, and its isomeride (ERLENMEYER), 1905, A., i, 784.
- $\beta\gamma$ -Diphenylbutyrolactone- γ -acetic acid**. See 5-Keto-2:3-diphenyltetrahydrofuran-2-acetic acid.
- $\alpha\gamma$ -Diphenylbutyronitrile**, chloro- β -imino- (β -imino- γ -phenyl- α -chloro-phenylpropyl cyanide) (v. WALTHER and HIRSCHBERG), 1903, A., i, 495.
- $\beta\beta'$ -Diphenylisobutyronitrile**, *oo*-di-cyano- (MITCHELL and THORPE), 1910, T., 2280.
- Diphenylbutyrophenones** and their oximes (KÖHLER), 1904, A., i, 596.
- s*-Diphenylcadaverine**. See *s*-Diphenylpentamethylenediamine.
- Diphenylcampholide** and dinitro- (SHIBATA), 1910, T., 1240.
- Diphenylcamphorylmethane** (HALLER and BAUER), 1906, A., i, 441.
- isomeride of, and the conditions of its formation and its benzoate (HALLER and BAUER), 1908, A., i, 351.
- Diphenylcamphorylmethylene** (HALLER and BAUER), 1906, A., i, 441.
- Diphenylcarbamic acid**, esters of (v. MEYER and NICOLAUS), 1911, A., i, 121.
- calcium salt (ERDMANN and VAN DER SMISSEN), 1908, A., ii, 589.
- Diphenylcarbamic anhydride** (HERZOG and BUDY), 1911, A., i, 680.
- as*-Diphenylcarbamide**, action of, on acids (HERZOG and HÂNCU), 1908, A., i, 268.
- s*-Diphenylcarbamide** (SCHIFF) 1907, A., i, 206.
- s*-Diphenylcarbamide** and its *p*-mono-, *di*-*p*- and *tri*-chloro-derivatives (YOUNG and DUNSTAN), 1908, T., 1057; P., 136.
- aromatic derivatives, and *di*-*m*-nitro- (TAUSSIG), 1904, A., i, 663.
- s*-Diphenylcarbamide**, tetraamino-, di-acetyl derivative of (CASSELLA & Co.), 1906, A., i, 712.
- o*-chloro- (MICHAEL and COBB), 1908, A., i, 949.
- m*-cyano-, *di*-*m*-cyano-, and *m*-cyano-thio- (BOGERT and BEANS), 1904, A., i, 584.
- p*-cyano- (BOGERT and WISE), 1912 A., i, 451.
- nitroso- (HANTZSCH and WECHSLER), 1903, A., i, 211.
- Diphenyl- ψ -carbamide** phenyl ether and its oxalate and picrate, *p*-tolyl ether, and β -naphthyl ethers (BUSCH, BLUME, PUNGS, and FLEISCHMANN), 1909, A., i, 565.
- Diphenylcarbamidedisulphonic acid**, 4:4'-diamino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 584.
- s*-Diphenylcarbamide-6:6'-disulphonic acid**, 2:2'-diamino-4:4'-*di*hydroxy- (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1911, A., i, 584.
- iso*-Diphenylcarbamidoacetanilide**, -synthesis of (POZZI-ESCOT), 1907, A., i, 355.
- s*-Diphenylcarbamidoazonaphthalene** (DIMROTH, EBLER, and GRUHL), 1907, A., i, 665.
- o*-Diphenylcarbamidobenzoic acid**, and its ethyl ester (v. MEYER and NICOLAUS), 1911, A., i, 121.
- 1:9-Diphenylcarbamidofluorene** (SCHMIDT and STÜTZEL), 1910, A., i, 31.
- α -Diphenylcarbamidohexoic acid** (v. MEYER and NICOLAUS), 1911, A., i, 121.
- 4:6-Diphenylcarbamidoisophthalic acid**, ethyl ester (BOGERT and KROPPF), 1909, A., i, 584.
- α -Diphenylcarbamidopropionic acid** (v. MEYER and NICOLAUS), 1911, A., i, 121.
- 2:5-Diphenylcarbamidoterephthalic acid**, ethyl ester (BOGERT and NELSON), 1907, A., i, 660.
- Diphenylcarbamyl chloride** as a reagent for phenols (HERZOG), 1907, A., i, 512.
- cyanide, and its derivatives (v. MEYER and NICOLAUS), 1911, A., i, 121.
- thiocyanate (JOHNSON and LEVY), 1907, A., i, 910.
- Diphenylcarbamyldazophenol** (v. MEYER and NICOLAUS), 1911, A., i, 121.

- N-Diphenylcarbamyldihydroquinoline**, *C*-hydroxy-, and its ethyl and methyl ethers (HERZOG and BUDY), 1911, A., i, 680.
- Diphenylcarbamyloximes** (DUNN), 1911, P., 239.
- s-Diphenylcarbamylyphenylhydrazide**. See Triphenylsemicarbazide.
- Diphenylcarbamyropyridine** chloride (HERZOG), 1907, A., i, 513.
- Diphenylcarbamyropyridinium hydroxide** (HERZOG and BUDY), 1911, A., i, 680.
- Diphenylcarbamyloquinolinium chloride** and platinichloride (HERZOG and BUDY), 1911, A., i, 680.
- Diphenylcarbazide**, action of chromic acid on (MOULIN), 1904, A., i, 455. as a test for chromium (MOULIN), 1904, A., ii, 368. as a test for molybdenum (LECOQ), 1904, A., ii, 369. as indicator in the titration of iron with dichromate (BRANDT), 1906, A., ii, 309. use of, in volumetric analysis (ODDO), 1909, A., ii, 766.
- Diphenylcarbazidodiacetic acid** and its ethyl ester (BUSCH, SCHNEIDER, and WALTER), 1904, A., i, 98.
- Diphenylcarbazone**, structure of (BAMBERGER), 1912, A., i, 56.
- Diphenylcarbinol**. See Benzhydrol.
- Diphenylcarbodiazone**, Cazeneuve's, structure of (BAMBERGER), 1912, A., i, 56.
- Diphenyl-2-carboxylic acid**, synthesis of (WEGER and DÖRING), 1903, A., i, 410.
- Diphenyl-2-carboxylic acid**, 2'-cyano-, and *mono*- and *di*-nitro-2'-cyano-, and their methyl esters (WERNER and PIGUET), 1905, A., i, 67.
- Diphenyl-4-carboxylic acid** and its sodium salt (LIEBERMANN and ZSUFFA), 1911, A., i, 388. methyl ester (SCHLENK and WEICKEL), 1909, A., i, 792.
- Diphenylchloroacetamide** (CLARKE), 1910, T., 429.
- Diphenylchlorocyclohexylmethane** (SCHMIDLIN and v. ESCHER), 1912, A., i, 437.
- Diphenylchloromethylcarbinol** (as *diphenylchlorohydrin*) (KLAGE and KESSLER), 1906, A., i, 498.
- 2:4-Diphenyl-1-*p*-chlorophenyldihydro-1:2:3-triazole** (BUSCH and HEFELE), 1911, A., i, 584.
- Diphenyl-*p*-chlorophenylethenylamidine** (v. WALTHER and GROSSMANN), 1909, A., i, 55.
- δδ-Diphenyl- α -*p*-chlorophenylfulgenic acid** and its salts (STOBBE and KOHLMANN), 1911, A., i, 380.
- δδ-Diphenyl- α -*p*-chlorophenylfulgide** (STOBBE and KOHLMANN), 1911, A., i, 380.
- 4:5-Diphenyl-1-*m*-chlorophenylglyoxaline** (BAILEY and MCCOMBIE), 1912, T., 2276.
- Diphenylmono- and -*m*-dichloroquinomethane** (STAUDINGER and BEREZA), 1911, A., i, 462.
- 3:5-Diphenyl-1-*p*-chloro-*o*-tolyltriazole** (v. WALTHER and KRUMBIEGEL), 1903, A., i, 662.
- Diphenylchrysofluorene**, amino- (ULLMANN and MOURAWIEW-WINIGRADOFF), 1905, A., i, 642.
- 1:3-Diphenyl-5-cinnamylidenobarbituric acid** (WHITELEY), 1907, T., 1342.
- 1:3-Diphenyl-5-cinnamylidene-2-thio-barbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 122.
- 2:6-Diphenyl-4-cinnamylpyridine**, 3-cyano- (v. MEYER and IRMSCHER), 1908, A., i, 912.
- Diphenylcitraconic acid** and its salts and anhydride (FITTIG and RIECHE), 1904, A., i, 421.
- Diphenyl-*o*-coumaryl alcohol** (HOUBEN), 1904, A., i, 335.
- Diphenyl- Δ^1 -croto lactone**. See 5-Keto-2:3-diphenyl-2:5-dihydrofuran.
- $\beta\gamma$ -Diphenylorotolactone- γ -acetic acid**. See 5-Keto-2:3-diphenyl-2:5-dihydrofuran-2-acetic acid.
- δβ-Diphenylorotolactonic acid**, δ -hydroxy-, and its lactone (KÖHLER), 1911, A., i, 985.
- $\beta\gamma$ -Diphenylorotonic acid** (β -benzylcinnamic acid) (FICHTER and LATZKO), 1907, A., i, 86; (RUHEMANN), 1910, T., 460.
- δδ-Diphenyl- α -cumylbutadiene- $\alpha\gamma$ -dicarboxylic acid** and its sodium salt and anhydride (STOBBE, K. and P. KOHLMANN, and NAOÛM), 1904, A., i, 672.
- 2:4-Diphenyl-1- ψ -cumyldihydro-1:2:3-triazole** (BUSCH and HEFELE), 1911, A., i, 584.
- 3:4-Diphenyl-5-cumylphenol** and its acetate (GARNER), 1904, A., i, 252.
- $\alpha\kappa$ -Diphenyl- $\Delta\delta$ -decadiene** (BORSCHÉ and WOLLEMAN), 1912, A., i, 23.
- $\alpha\kappa$ -Diphenyldecane**, and $\alpha\kappa$ -diamino-, and its dibenzoate, $\alpha\beta\kappa$ -tetrabromo-, $\alpha\kappa$ -dihydroxy-, and $\alpha\kappa$ -dioximino- (BORSCHÉ and WOLLEMAN), 1912, A., i, 23.

- Diphenyldiacetamide, *p*-chloro- (KÖNIG), 1904, A., i, 297.
- 2:2'-Diphenyldiacetyldiphenyl (oo'-di-deoxybenzoin) and its dioxime and diphenylhydrazone, and dibromo-, dichloro-, and diisonitroso-derivatives (ZINCKE and TROPP), 1909, A., i, 35.
- Diphenyldiacetylene and its di- and tetra- bromides (STRAUS and MÜLLER), 1906, A., i, 78.
- Diphenyl-2:2'-diacrylic acid (MAYER), 1911, A., i, 870.
- 4:4'-Diphenyldialdehyde and its diphenylhydrazone and dioxime (ULLMANN), 1904, A., i, 728.
- Diphenyldialkyl-1-alkyl- and -1-aryl- ψ -dithiobiurets (BILLETTER and RIVIER), 1905, A., i, 50.
- $\alpha\epsilon$ -Diphenyl- $\alpha\epsilon$ -dialkylsulphone- $\beta\delta$ -dimethylpentan- γ -ones (POSNER), 1904, A., i, 324.
- $\alpha\epsilon$ -Diphenyl- $\alpha\gamma$ -dialkylsulphonepentan- ϵ -ones (POSNER), 1904, A., i, 324.
- N*-Diphenyl-*S*-dialkylisothiouram disulphides (v. BRAUN and RUMPF), 1903, A., i, 619.
- Diphenyldianisylethylene (STAUDINGER and KON), 1911, A., i, 879.
- s*-Diphenyldi-*p*-anisylhydrazine and its derivatives (WIELAND and SÜSSER), 1912, A., i, 905.
- 2:2'-Diphenyl-10:10'-dianthrone-9:9' (SCHOLL and NEOVIUS), 1911, A., i, 452.
- 2:5-Diphenyl-1:4-diazine. See 2:5-Diphenylpyrazine.
- Diphenyldibenzyl-diaminobiuret (MICHAELIS), 1908, A., i, 471; (MILRATH), 1908, A., i, 581.
- Diphenyldibenzylcarbazide (MILRATH), 1908, A., i, 581.
- Diphenyldibenzyl-dimethyltrimethylene-diammonium dibromide (WEDEKIND and MEYER), 1909, A., i, 187.
- Diphenyldibenzylhydrazine and its hydrochloride (FRANZEN and ZIMMERMANN), 1906, A., i, 702.
- Diphenyldibenzyltriazan (MICHAELIS), 1908, A., i, 471; (GOLDSCHMIEDT), 1908, A., i, 572.
- $\alpha\delta$ -Diphenyldibutadiene and its bromides (FITTIG and BATT), 1904, A., i, 744.
- Diphenyldiisobutylphosphonium iodide (ARBUSOFF), 1911, A., i, 100.
- s*-Diphenyldicarbamidodido-*m*-phenylenediamine (MORGAN and WOOTTON), 1905, T., 939.
- Diphenyl-2:2'-dicarboxylic acid, 4:6:4':6'-tetranitro-, methyl ester (ULLMANN and ENGI), 1909, A., i, 474.
- Diphenyl-4:4'-dicarboxylic acid and its nitrile, 3:3'-dichloro- (CAIN), 1903, P., 284; 1904, T., 9.
- 2:2'-dinitro-, and its salts, and 2:2'-diamino-, and its diacetyl derivative, and hydrochloride (v. JAKUBOWSKI and v. NIEMENTOWSKI), 1909, A., i, 265.
- Diphenyldicarboxylic acids, 2:2'-, 3:3'-, and 4:4'-, methyl esters (ULLMANN), 1904, A., i, 728.
- s*-Diphenyldi-*p*-chlorophenylpinacone (MONTAGNE), 1907, A., i, 855.
- Diphenyldiethylaminomethylcarbinol and its additive salts (PAAL and WEIDENKAFF), 1906, A., i, 236; (KLAGES and KESSLER), 1906, A., i, 498.
- Diphenyl-diethyl- and -dimethyl- $\alpha\gamma$ -diaminopropanes and their picrates (FRÖHLICH), 1907, A., i, 347.
- 3:6-Diphenyl-2:5-diethyl-2:5-dihydropyrazine and its hydrochloride (HILDESHEIMER), 1910, A., i, 891.
- Diphenyldiethylethylenediamine and its picrate (FRÖHLICH), 1907, A., i, 347.
- 4:5-Diphenyl-1:3-diethylglyoxalone and dihydroxy- (BILTZ and KOSEGARTEN), 1909, A., i, 744.
- Diphenyldiethylhexahydrotetrazine (KNORR and WEIDEL), 1909, A., i, 966.
- 5:5-Diphenyl-1:3-diethylhydantoin (BILTZ and KOSEGARTEN), 1909, A., i, 744.
- $\alpha\beta$ -Diphenyl- $\alpha\beta$ -diethylhydrazine (WIELAND and FRESSEL), 1912, A., i, 903.
- s*-Diphenyldiethylmethylenediamine (FRÖHLICH), 1907, A., i, 347; (Houben and ARNOLD), 1908, A., i, 534; (v. BRAUN), 1908, A., i, 685.
- s*-Diphenyldiethylpentamethylenediamine (v. BRAUN), 1908, A., i, 678.
- $\beta\beta$ -Diphenyl- $\alpha\alpha$ -diethylpropiolactone, β -hydroxy- (FREUND and FLEISCHER), 1910, A., i, 491.
- Diphenyldiethylsilicane (LADENBURG), 1907, A., i, 668.
- Diphenyldiethylsilicoethylene (KIPPING), 1911, P., 144.
- Diphenyldihydrazone-oxalacetic acid, ethyl ester, preparation of (RABISCHONG), 1903, A., i, 55.
- Diphenyldihydroacenaphthene, dihydroxy- (ACREE), 1905, A., i, 216.
- 9:9-Diphenyldihydroanthracene and 10-bromo-, 10-hydroxy-, and 2':4'-dihydroxy-, diacetyl derivative of (LIEBERMANN and LINDENBAUM), 1905, A., i, 522.

- 9:10-Diphenyldihydroanthracene and 9:10-*di*hydroxy-, and its monomethyl ether and dichloride (HALLER and GUYOT), 1904, A., i, 314, 659.
- 1:1-Diphenyl-1:2-*di*hydroisobenzofuran (GUYOT and CATEL), 1905, A., i, 517; 1906, A., i, 761.
- 1:2-Diphenyl-1:2-*di*hydroisobenzofuran and 2-hydroxy- (GUYOT and CATEL), 1905, A., i, 540; 1907, A., i, 76.
- 2:3-Diphenyl-2:4-dihydro-1:3-benzoxazine, 4-cyano- (ROHDE and SCHÄRTEL), 1910, A., i, 776.
- 4:5-Diphenyl-2:5-dihydroglyoxaline, 2-hydroxy-, and its derivatives (BILTZ), 1912, A., i, 908.
- 4:5-Diphenyldihydroglyoxalone (BILTZ and RIMPEL), 1908, A., i, 575.
- 4:5-Diphenyldihydroglyoxalone, 4:5-*di*hydroxy-, and 4:5-*di*chloro- (BILTZ and RIMPEL), 1909, A., i, 742.
- 4:5-Diphenyl-4:5-dihydroglyoxalone and its diacetyl derivative (BILTZ), 1912, A., i, 908.
- 5:5-Diphenyl-4:5-dihydro-4-glyoxalone and its derivatives (BILTZ and SEYDEL), 1912, A., i, 910.
- 8 γ -Diphenyl- $\alpha\delta$ -dihydromuconic acid and its ethyl ester and derivatives (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), 1911, A., i, 874.
- 2:5-Diphenyl-4:5-dihydro-1:2:4-oxadiazole and its 4-acetyl and 4-benzoyl derivatives (STOLLÉ), 1904, A., i, 102.
- 3:5-Diphenyl-2:3-dihydro-2-oxazolone (McCOMBIE and SCARBOROUGH), 1912, P., 331.
- N,N'*-Diphenyldihydrophenanthraphenazine (FREUND and RICHARD), 1909, A., i, 418.
- Diphenyldihydrophenanthrene, *di*hydroxy-, and its stereoisomeride and their anhydrides (WERNER and GROB), 1904, A., i, 865.
- Diphenyldihydrophenazine and its bromide (WIELAND and LECHER), 1911, A., i, 569.
- 5:10-Diphenyldihydrophenazine, *di-p*-nitro- (WIELAND and LECHER), 1912, A., i, 904.
- Diphenyldihydropyrazine (GABRIEL and LIECK), 1908, A., i, 465.
- Diphenyldihydropyridazine (PAAL and DENCKS), 1903, A., i, 289.
- 3:6-Diphenyl-4:5-dihydropyridazine-4-carboxylic acid and its ethyl ester, synthesis of (PAAL and KÜHN), 1908, A., i, 57.
- 3:6-Diphenyldihydropyrazoquinazolone (MICHAELIS and LEO), 1910, A., i, 151.
- 2:6-Diphenyldihydropyridine, 3:5-*di*-cyano- (V. MEYER and KLEINSTÜCK), 1908, A., i, 910.
- 2:5-Diphenyl-1:2-dihydropyridone, 3-hydroxy- (BLAND and THORPE), 1912, T., 870.
- Diphenyldihydroquinoylmethane, *p*-amino-, *N*-benzoyl derivative of (THOMAE), 1905, A., i, 587.
- Diphenyldihydroretene, *di*hydroxy- (HEIDUSCHKA and SCHELLER), 1910, A., i, 398.
and its derivatives (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- 5:6-Diphenyl-2:3-dihydro-1:2:3:4-tetrazine and its mono- and 2:3-di-benzoyl derivatives (STOLLÉ), 1904, A., i, 200; (STOLLÉ, MÜNCH, and KIND), 1905, A., i, 97.
- 3:6-Diphenyl-1:4-dihydro-1:2:4:5-tetrazine and its benzylidene derivative (STOLLÉ), 1905, A., i, 249; 1906, A., i, 315; (RUHEMANN), 1906, A., i, 465.
- 3:6-Diphenyl-1:4-dihydro-1:2:4:5-tetrazine, *di-m*-amino- (JUNGAHN and BUNIMOWICZ), 1903, A., i, 131.
di-p-bromo-, and its hydrochloride (STOLLÉ and WEINDEL), 1906, A., i, 708.
and its 1:2-dibenzoyl derivative, and *di-p*-chloro- (STOLLÉ and WEINDEL), 1906, A., i, 708.
- 3:6-Diphenyl-1:2- and -1:4-dihydro-1:2:4:5-tetrazines, 1-benzoyl derivatives (STOLLÉ and THOMAE), 1906, A., i, 462.
- Diphenyldihydrotetrazinedicarboxylic acid and its ethyl ester (BOWACK and LAPWORTH), 1905, T., 1867.
- Diphenyl-*s-N*-dihydrotetrazinethiol (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 533.
- 5:6-Diphenyldihydro-1:2:4-triazine, 3-hydroxy- (BILTZ), 1905, A., i, 491.
- 1:4-Diphenyldihydrotriazole, *endothio*- and its 5-methyl derivative (BUSCH and SCHNEIDER), 1903, A., i, 534.
- 4:5-Diphenyldihydrouracil (POSNER and STIRNUS), 1912, A., i, 457.
- Diphenyldi- α -hydroxynaphthylmethane and its diacetyl and dibenzoyl derivatives (CLOUGH), 1906, T., 773; P., 109; (SHRIMPTON), 1906, A., i, 659.
- Diphenyldi-iminotetrahydrodiazothiole hydrochloride (FROMM and HEYDER), 1909, A., i, 903.
- Diphenyl-2:5-dimethoxyphenylcarbinol (KAUFFMANN and GROMBACH), 1905, A., i, 281.

- Diphenyl-2:5-dimethoxyphenylmethane** and its isomeride and chloride (KAUFFMANN and GROMBACH), 1905, A., i, 773.
- 4:5-Diphenyl-1:3-, -1:7-, and -1:9-dimethylacetylenediureine** and their acetyl derivatives (BILTZ and RIMPEL), 1909, A., i, 849.
- as*-**Diphenyldimethylamine**. See Methylbenzhydramine.
- Diphenyldimethylammonium salts** (GADOMSKA and DECKER), 1903, A., i, 692.
- 1:3-Diphenyl-5:5-dimethylbarbituric acid** (WHITELEY), 1906, P., 200.
- 1:4-Diphenyl-3:6-dimethyl-1:2:7-benzotriazole** (BÜLOW and HAAS), 1911, A., i, 88.
- γδ*-**Diphenyl-ββ-dimethylbutan-γ-ol** (LUCAS), 1910, A., i, 378.
- αβ*-**Diphenyl-γγ-dimethyl-Δ^α-butylene** (RAMART-LUCAS), 1911, A., i, 636.
- βγ*-**Diphenyl-αα-dimethylbutyric acid** (JAPP and MICHIE), 1903, T., 311.
- 2:3-Diphenyl-1:1-dimethylbutyrolactone** (*γ-hydroxy-βγ-diphenyl-αα-dimethylbutyric acid, lactone of*) (JAPP and MICHIE), 1903, T., 311.
- βγ*-**Diphenyl-αα-dimethylbutyrolactone-γ-carboxylic acid** and its silver salt (GRAY), 1909, T., 2148.
- 2:3-Diphenyl-1:1-dimethyl-Δ²-croto lactone**. See 5-Keto-2:3-diphenyl-4-dimethyl-4:5-dihydrofuran.
- 1:1'-Diphenyl-3:3'-dimethyl-4':5'-dihydrobispyrazole-5-one**, 5-chloro-, and its additive derivatives (MICHAELIS, RADEMACHER, and SCHMIEDEKAMPF), 1907, A., i, 731.
- 4:5-Diphenyl-1:3-dimethyldihydroglyoxalone**, 4:5-*di*bromo- (BILTZ and RIMPEL), 1909, A., i, 743.
- Diphenyldimethyldihydrophenazine** (WIELAND and LECHER), 1912, A., i, 904.
- 3:6-Diphenyl-2:5-dimethyl-2:5-dihydropyrazine** and its hydrochloride and oxalate (GABRIEL and LIECK), 1908, A., i, 466.
- 3:6-Diphenyl-2:5-dimethyl-3:6-dihydropyrazine** and its hydrochloride (GABRIEL and LIECK), 1908, A., i, 466.
- 1:4-Diphenyl-3:6-dimethyldipyrazole** and its methiodide (MICHAELIS and BENDER), 1903, A., i, 289.
- Diphenyldimethylethylenediamine** and its picrate (FRÖHLICH), 1907, A., i, 347.
- methyl iodide derivatives, and dihydrochloride of (DUNLOP and JONES), 1909, T., 418.
- Diphenyldimethylethylenediamine, ω-dicyano-** (v. BRAUN), 1908, A., i, 626.
- as*-**Diphenyldimethylethylene oxide** (PARRY), 1911, T., 1172; P., 142.
- δδ*-**Diphenyl-αα-dimethylfulgenic acid** and its acid ester and -fulgide (STOBBE and LENZNER), 1905, A., i, 857.
- αβ*-**Diphenyl-γγ-dimethylglutaric acid, α-hydroxy-**, sodium salt (GRAY), 1909, T., 2150.
- 4:5-Diphenyl-1:3-dimethylglyoxalone** (BILTZ and HORRMANN), 1908, A., i, 57.
- Diphenyldimethylhexahydrodetrizaine** (KNORR and WEIDEL), 1909, A., i, 965.
- 4:5-Diphenyl-2:7-dimethylhexamethylenimine** and its derivatives (BARGEL-LINI), 1907, A., i, 962.
- 2:6-Diphenyl-3:3-dimethylcyclohexan-2-ol-4-one-1-carboxylic acid**, ethyl ester (DIECKMANN and v. FISCHER), 1911, A., i, 451.
- 4:4'-Diphenyl-1:1'-dimethylhydantil** (GABRIEL), 1907, A., i, 91.
- 5:5-Diphenyl-1:3-dimethylhydantoin** (BILTZ, HORRMANN, and RIMPEL), 1908, A., i, 219; (ANGELI), 1908, A., i, 462.
- 5:5'-Diphenyl-1:3-dimethylhydantoin, 4:5-di**hydroxy- (BILTZ, HORRMANN, and RIMPEL), 1908, A., i, 219; (ANGELI), 1908, A., i, 462.
- αβ*-**Diphenyl-αβ-dimethylhydrazine** (WIELAND and FRESSEL), 1912, A., i, 903.
- s*-**Diphenyldimethylmethylenediamine** (FRÖHLICH), 1907, A., i, 346; (v. BRAUN), 1908, A., i, 685.
- α'β*-**Diphenyl-αα-dimethyl-α'β-oxido-glutaric acid** and anhydride, and the action of phenylhydrazine on the acid (JAPP and MICHIE), 1903, T., 307; P., 22.
- s*-**Diphenyldimethylpentamethylenediamine** (v. BRAUN), 1908, A., i, 678.
- aa*-**Diphenyl-δδ-dimethyl-pentan-γ-one** and *β*-bromo-, and -Δ^α-pentene-γ-one, and -Δ^β-pentenyl γ-acetate (KOHLER), 1907, A., i, 1052.
- 4:5-Diphenyl-1:3-dimethylcyclopentan-2-one** and its oxime and di- and tetrabromo-derivatives (JAPP and MAITLAND), 1904, T., 1479; P., 204.
- 4:5-Diphenyl-1:3-dimethylcyclopentan-2-one, 1:4:5-tri**hydroxy- and its reactions (JAPP and MICHIE), 1903, T., 295; P., 21.
- aa*-**Diphenyl-δδ-dimethyl-Δ^β-penten-γ-ol**, dimethyl ether of (KOHLER), 1907, A., i, 1052.

- 3:4-Diphenyl-5:5-dimethyl- Δ^2 -cyclopenten-2-ol-1-one and its phenylhydrazine (GRAY, 1909, T., 2146).
- 3:4-Diphenyl-5:5-dimethylcyclopentenone and its oxime (GRAY, 1909, T., 2147).
- 4:5-Diphenyl-1:3-dimethyl- Δ^3 -cyclopenten-2-one and its oxime and dibromide (JAPP and MAITLAND), 1904, T., 1483; P., 204.
- 4:5-Diphenyl-1:3-dimethyl- Δ^4 -cyclopenten-2-one (JAPP and MICHIE, 1903, T., 303; JAPP and MAITLAND), 1904, T., 1477; P., 204.
- $\gamma\gamma$ -Diphenyl- $\beta\beta$ -dimethylpropan- γ -ol (RAMAET-LUCAS, 1910, A., i, 378).
- 3:6-Diphenyl-2:5-dimethylpyrazine (GABRIEL and LIECK), 1908, A., i, 466.
- 1:5-Diphenyl-3:4-dimethylpyrazoline (AUWERS and VOSS), 1910, A., i, 70.
- 2:3-Diphenyl-6:8-dimethylquinoline-4-carboxylic acid (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 1018.
- Diphenyldimethylsulphonamide (WOHL and KOCH), 1911, A., i, 37.
- 2:5-Diphenyl-2:5-dimethyltetrahydrooxazol-4-one, and its phenylcarbimide derivative (STAUDINGER and RUŽIČKA), 1911, A., i, 463.
- 5:5-Diphenyl-1:3- and -2:3-dimethylthiohydantoin (BILTZ, KREBS, and SEYDEL), 1909, A., i, 526.
- Diphenyldimethylthiopinacene (MANCHOT and KRISCHE), 1905, A., i, 142.
- Manchot and Krische's, composition of (FROMM and HÖLLER), 1907, A., i, 710.
- Diphenyl-dimethyl-, -diethyl-, and -dimethylethyl-thiouram sulphides (v. BRAUN and STECHELE), 1903, A., i, 619.
- s-Diphenyl-di-p-nitrophenylhydrazine (WIELAND, ROSEKU, and GAMBARJAN), 1912, A., i, 906.
- Diphenyldiphenanthraphenazone ketone and its hydrochloride (CONSONNO), 1904, A., i, 676.
- 9:12-Diphenyldiphenylsuccindane, 9:12-dihydroxy- (BRAND), 1912, A., i, 960.
- 4:4'-Diphenyldiphenyl (ULLMANN), 1904, A., i, 726.
- Diphenyldiphenylenecarbinol and its perchlorate and ethyl ether (SCHLENK and HERZENSTEIN), 1910, A., i, 238.
- Diphenyl-4:4'-diphenylenedi-iodinium hydroxide and its salts with acids (WILLGERODT and HILGENBERG), 1909, A., i, 908.
- Diphenyldiphenylenemethane, derivatives of (ULLMANN and v. WURSTENBERGER), 1904, A., i, 154.
- Diphenyldiphenylenemethyl chloride (SCHLENK and HERZENSTEIN), 1910, A., i, 238.
- Di-p-phenyldiphenylmethylcarbinol (SCHLENK and WEICKEL), 1911, A., i, 546.
- 1:3-Diphenyl-5-diphenylmethylene- and -5-diphenylmethyl-barbituric acids (WHITELEY), 1907, T., 1343; P., 203.
- $\alpha\epsilon$ -Diphenyl- γ -diphenylmethylene- $\Delta^{\alpha\delta}$ -pentadiene and its tetrabromide and chloro-derivative (STAUDINGER), 1908, A., i, 411.
- Diphenyl-4:4'-diphthalamie acid and its sodium salt (CAIN and BRADY), 1912, T., 2307.
- Diphenyl-4:4'-diphthaloylic acid (SCHOLL and NEOVIUS), 1911, A., i, 463.
- Diphenyldiselenide-di-o-carboxylamide (LESSER and WEISS), 1912, A., i, 644.
- Diphenyldiselenide-di-o-carboxylic acid (LESSER and WEISS), 1912, A., i, 643.
- Diphenyl-disulphide-4:4'-bisazodi- β -naphthylamine and 2:2'-dinitro- (MÜLLER), 1907, A., i, 89.
- Diphenyl- α -disulphone (HILDITCH), 1908, T., 1526; P., 192.
- 4:4'-Diphenyldisulphondimethylanilide (ULLMANN), 1904, A., i, 727.
- Diphenyl-3:3'-disulphonic acid, and its methyl ester, amide, anilide, and chloride (SCHULTZ and KOHLHAUS), 1906, A., i, 818.
- Diphenyl-4:4'-disulphonic acid, 2:2'-dinitro-, and its potassium salt (ULLMANN and FRENTZELL), 1905, A., i, 308.
- Diphenyldithiolimine, *oo'*-dinitro- (ZINCKE and FARR), 1912, A., i, 764.
- s-Diphenyldi-p-tolylhydrazine (WIELAND and LECHER), 1912, A., i, 904.
- s-Diphenyldi-p-tolylpinacene (ACREE), 1904, A., i, 743.
- action of acetyl chloride on (ACREE), 1905, A., i, 216.
- Diphenylditriazole ketone and its oxime (WOLFF and GRAU), 1912, A., i, 1035.
- Diphenylditriazole-ketone-5-carboxylic acid and its derivatives (WOLFF and GRAU), 1912, A., i, 1035.
- Diphenyldi-2:4:5-trimethoxyphenyl-methyl ether (FABINYI and SZÉKI), 1906, A., i, 424.
- $\alpha\mu$ -Diphenyldodecane (v. BRAUN and DEUTSCH), 1912, A., i, 688.
- Diphenylene (DOBIE, FOX, and GAUGE), 1911, T., 683; P., 90.

Diphenylene oxide (DOBBIE, FOX, and GAUGE), 1912, P., 327.

derivatives of (BORSCHKE and BOTHE), 1908, A., i, 528.

1:2:7:8-tetrahydroxy-, and its tetra-acetate (NIERENSTEIN), 1912, A., i, 204.

di-, and tetranitro- (MAILHE), 1912, A., i, 553.

2:2'-oxide, 4:5:4':5'-tetrahydroxy-, and its acetyl derivative (SCHÜLER), 1907, A., i, 701.

disulphide. See Thianthren.

p-disulphide, monoxide of (HILDITCH), 1910, T., 2586.

p-disulphoxide (HILDITCH), 1910, T., 2585.

Diphenylene, dibromo-, and di- and tetra-nitro- (DOBBIE, FOX, and GAUGE), 1912, P., 327.

Diphenyleneacetamide, chloro- (KLINGER), 1912, A., i, 558.

Diphenyleneacetic acid and its ethyl ester, anhydride, anilide, phenylhydrazide and chloro-, ethyl ester, anilide, and chloride of (STAUDINGER), 1906, A., i, 861.

Diphenyleneacetyl bromide, α -bromo- (KLINGER), 1912, A., i, 558.

Diphenyleneazomethylene (STAUDINGER and KUPFER), 1911, A., i, 751.

Diphenyleneazone, its oxide, and 3:8-diamino- (ULLMANN and DIETERLE), 1904, A., i, 269.

and 3:8-diamino-, and its dibenzylidene and difurfurylidene derivatives (FICHTER and DIETERLE), 1904, A., i, 631.

Diphenylene-3:4:5-tribromoquinoxaline (JACKSON and FISKE), 1903, A., i, 690.

Diphenylenecarbinol. See Fluorene alcohol.

Diphenylenedibenzoylmuconic acid (β -diphenylene- $\alpha\delta$ -dibenzoylbutadiene- $\alpha\delta$ -dicarboxylic acid), ethyl ester, and its isomeride (JAPP and WOOD), 1905, T., 713.

Diphenylenedihydrofuran (MEYER and SPENGLER), 1905, A., i, 220, 362.

δ -Diphenylene- $\alpha\alpha$ -dimethyldihydrofulgide (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), 1911, A., i, 381.

δ -Diphenylene- $\alpha\alpha$ -dimethylfulgenic acid (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), 1911, A., i, 381.

δ -Diphenylene- $\alpha\alpha$ -dimethylfulgide (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), 1911, A., i, 381.

$\alpha\alpha$ -Diphenyl- δ -diphenylenefulgenic acid (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), 1911, A., i, 381.

$\alpha\alpha$ -Diphenyl- δ -diphenylenefulgide

(STOBBE, BADENHAUSEN, HENNICKE, and WAHL), 1911, A., i, 381.

Diphenylene-ethoxyacetic acid and its methyl ester and anilide (KLINGER), 1912, A., i, 701.

Diphenylene-ethylene and its dibromide (MANCHOT and KRISCHE), 1905, A., i, 143.

Diphenyleneglycollanilide (KLINGER), 1912, A., i, 558.

Diphenyleneglycollic acid (fluorene-9-carboxylic acid), condensation of, with phenols and phenol ethers (BISTRZYCKI and v. WEBER), 1910, A., i, 742.

methyl ester (KLINGER), 1912, A., i, 558.

Diphenyleneglycollic acid, 9-hydroxy-, and its bromo- and nitro-derivatives, and isomeride (SCHMIDT and BAUER), 1906, A., i, 25.

methyl and ethyl esters, and their acetyl derivatives (SCHMIDT and MEZGER), 1907, A., i, 43.

3-nitro- (SCHMIDT and SÖLL), 1908, A., i, 997.

Diphenylenehydrazine and its derivatives (WIELAND, SÜSSER, and FRESSEL), 1912, A., i, 906.

2':3'-Diphenyleneindole. See 9:10-Phenanthracarbazole.

Diphenyleneiodonium bromide (MASCARELLI), 1909, A., i, 95.

hydroxide and its derivatives (MASCARELLI), 1907, A., i, 1021; 1909, A., i, 94.

Diphenyleneketen (STAUDINGER), 1906, A., i, 861.

Diphenylene ketone. See Fluorenone.

Diphenylenemethane. See Fluorene.

Diphenylenemethoxyacetic acid and its esters and anilide (KLINGER), 1912, A., i, 701.

Diphenylenemethylene- p -aminophenol (REDDELIEN), 1910, A., i, 747.

$\gamma\gamma$ -Diphenylene- α -methylitaconic acid and its anhydride (STOBBE and GOLLÜCKE), 1906, A., i, 361.

Diphenylene- N -methylsultam (ULLMANN and GROSS), 1910, A., i, 887.

Diphenylene-oxide-4:5-dicarboxylic acid, 1:2:7:8-tetrahydroxy-, and its derivatives (NIERENSTEIN), 1912, A., i, 204.

o -Diphenylene-oxide-ketobenzoic acid and its isomeric methyl esters, amide, oxime anhydride and phenylhydrazone anhydride (STÜMMER), 1907, A., i, 723.

- Diphenylenephenylpyrrylmethane** (KHOTINSKY and PATZEWITCH), 1909, A., i, 830.
- Diphenylenepropylene** and its dibromide and ozonide (DAUFRESNE), 1908, A., i, 165.
- α -Diphenylenepyridinediketoxime**, dibenzoyl derivative (ERRERA), 1904, A., i, 174.
- Diphenylenequinoxaline**. See Phenanthraphenazine.
- Diphenylene-sultam** (ULLMANN and GROSS), 1910, A., i, 886.
- Diphenylenetartramide** (JAPP and KNOX), 1905, T., 685.
- Diphenylene-dithiocarbamide**, -bisthiocarbamide, and -bisphenylthiocarbamide (JACOBSON and LOEB), 1904, A., i, 204.
- Diphenyleneurethane**. See Carbazole- γ -carboxylic acid, ethyl ester.
- Diphenylethane**, action of nitric acid on (KONOWALOFF and JATZEWITSCH), 1905, A., i, 763.
- derivatives, ring formation in (KAUF-
LER and BOREL), 1907, A., i, 794.
- $\alpha\alpha$ -Diphenylethane**, *p*-amino-, and its sulphate and benzoyl derivative (BUSCH and RINCK), 1905, A., i, 519.
- o*-hydroxy-, and its sodium derivative and *p*-hydroxy-, and their phenylurethanes (STOERMER and KIPPE), 1904, A., i, 183.
- di-p*-hydroxy-, and its dimethyl ether (LUNIAK), 1904, A., i, 495.
- bromo- and bromonitro-derivatives, and their acetates (ZINCKE and HENKE), 1909, A., i, 23.
- s*-Diphenylethane** (*dibenzyl*) and benzil, cryoscopic behaviour of (MASCARELLI and MUSATTY), 1910, A., ii, 390.
- s*-Diphenylethane** *tetrachlorodihydroxy*-, and its diacetate (ZINCKE and FRIES), 1903, A., i, 180.
- o*-hydroxy- (STOERMER and REUTER), 1904, A., i, 181; (v. KOSTANECKI, ROST, and SZABRAŃSKI), 1905, A., i, 341; (v. KOSTANECKI), 1905, A., i, 433.
- p*-hydroxy-, and its phenylurethane and isomerides (STOERMER and KIPPE), 1904, A., i, 183.
- β -imino- α -cyano-, and the action of sulphuric acid on (ATKINSON, INGHAM, and THORPE), 1907, T., 592.
- 4:4'-dinitro-** (GREEN, DAVIES, and HORSFALL), 1907, T., 2079; P., 289.
- Diphenylethane series**, attempts at benzidine formation in (DUVAL), 1909, A., i, 747.
- $\alpha\beta$ -Diphenylethane- α -carboxylic acid** (*dibenzyl- α -carboxylic acid*), 2-hydroxy- (CZAPLICKI, v. KOSTANECKI, and LAMPE), 1909, A., i, 235.
- Diphenylethane-*p*-carboxylic acid**, sodium and calcium salts (LIEBERMANN and MITTER), 1912, A., i, 466.
- s*-Diphenylethane-2:2'-dicarboxylic acid** (*dibenzyl-2:2'-dicarboxylic acid*) (FISCHER and WOLFFENSTEIN), 1904, A., i, 896.
- 4:4'-dinitro-** (GREEN, DAVIES, and HORSFALL), 1907, T., 2082.
- s*-Diphenylethane-4:4'-dicarboxylic acid** (*dibenzyl-4:4'-dicarboxylic acid*) and its esters and chloride (FISCHER and WOLFFENSTEIN), 1904, A., i, 896.
- Diphenylethanethiocarbamide** (KAUF-
LER and BOREL), 1907, A., i, 795.
- Diphenylethenylamidine**. See Diphenylacetamidine.
- Diphenylethenylhydrazidine** and its hydrochloride (VOSWINCKEL), 1903, A., i, 777.
- Diphenyl ether**, *o*-hydroxy-, and its acetyl derivative and methyl ether (NORRIS, MACINTYRE, and CORSE), 1903, A., i, 372.
- Diphenyl-ether-2-carboxylic acid**. See 2-Phenoxybenzoic acid.
- Diphenylethoxyacetic acid** (KLINGER), 1912, A., i, 701.
- Diphenylethoxyethylcarbinol** (REYNOLDS), 1910, A., i, 858.
- 4:5-Diphenyl-1-ethylacetylenediureine** and its diacetate (BLITZ and KOSE-
GARTEN), 1909, A., i, 744.
- $\alpha\alpha$ -Diphenylethyl alcohol** (TIFFENEAU), 1907, A., i, 406.
- Diphenylethyl anisyl ketone** and bromo- (KOHLE), 1907, A., i, 1053.
- Diphenylethylamine**, 2:4-dinitro-, and 4-nitro-2-amino- (DELETRA and ULLMANN), 1904, A., i, 272.
- hexanitro-* (MULDER), 1906, A., i, 493.
- $\alpha\alpha$ -Diphenylethylamine** and its derivatives (BUSCH and LEEFHELM), 1908, A., i, 152.
- $\alpha\beta$ -Diphenylethylamine**, β - and *iso*-hydroxy-, methiodides (RABE and HAL-
LENSLEBEN), 1910, A., i, 317.
- $\beta\beta$ -Diphenylethylamine**, β -hydroxy-, and its salts (PAAL and WEIDENKAF), 1905, A., i, 436.
- 1:4-Diphenyl-5-ethyl-3:5-endoanilo-
4:5-dihydro-1:2:4-triazole** (BUSCH and MEHRTENS), 1906, A., i, 117.

- 1:3-Di- β -phenylethylbenzene**, 4:6-di-amino-, and their derivatives (BORSCHKE), 1912, A., i, 181.
- s-Di- β -phenylethylcarbamide**, di-*o*-hydroxy- (PSCHORR and EINBECK), 1905, A., i, 590.
- Diphenylethylcarbinol** (HELL and BAUER), 1904, A., i, 241.
- ethyl ether** (KONOWALOFF and DOBROWOLSKY), 1905, A., i, 765.
- Diphenylethylcarbinol**, *o*-amino- (STOERMER and FINCKE), 1909, A., i, 842.
- Diphenylethyldiamine**, ω -tri-bromo- and -chloro-*m*-cyano- (BOGERT and BEANS), 1904, A., i, 585.
- 1:5-Diphenyl-4-ethylidihydrotriazole**, endothio- (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 532.
- Di- β -phenylethyldimethylammonium** bromide (V. BRAUN), 1911, A., i, 35.
- Diphenylethyldiphenylcarbinol** (KOHLENER), 1904, A., i, 596.
- as-Diphenylethylene**, new series of leucobases and colouring matters derived from (LEMOULT), 1909, A., i, 836; 1911, A., i, 399.
- bromo-derivatives** (STOERMER and SIMON), 1905, A., i, 53.
- oxide** (KLAGES and KESSLER), 1906, A., i, 498; (PAAL and WEIDENKAFF), 1906, A., i, 583.
- oxides** (RABE and HALLENSLEBEN), 1910, A., i, 317.
- as-Diphenylethylene**, α -bromo- β -*o*-amino-, and its platinichloride and acetyl derivative, and *o*-amino-, and its salts and acetyl derivative (STOERMER and FINCKE), 1909, A., i, 841.
- o*-hydroxy-**, and its sodium derivative, phenylurethane, and acetate (STOERMER and KIPPE), 1904, A., i, 182.
- s-Diphenylethylene**. See Stilbene.
- Diphenylethylenediamine**, di- α -bromo-*n*- and -*iso*-butyryl derivatives, reactions of, with phenol and α - and β -naphthols (BISCHOFF), 1905, A., i, 86.
- di- α -monobromopropionyl** derivative, reactions of, with the sodium derivatives of phenols, ethyl salicylate and ethyl malonate (BISCHOFF), 1905, A., i, 84.
- di- α -bromoisovaleryl** derivative, reactions of (BISCHOFF), 1905, A., i, 157.
- $\alpha\beta$ -Diphenylethylenediamine**, salts and derivatives of (BILTZ and KREBS), 1912, A., i, 909.
- as-Diphenylethylene glycol** (PAAL and WEIDENKAFF), 1906, A., i, 583.
- as-Diphenylethylene glycol** and its diacetate (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 581.
- and its transformation product (TIFFENEAU), 1907, A., i, 405.
- Diphenylethylenimide** and its salts (BRUNNER and RAPIN), 1908, A., i, 863.
- s-Diphenylethyl ether** (ZELTNER and TARASSOFF), 1910, A., i, 316.
- 4:5-Diphenyl-1-ethylglyoxalone** and its derivatives (BILTZ and KOSEGARTEN), 1909, A., i, 744.
- Diphenylethylguanidine** and its hydrobromide (GUILLEMARD), 1905, A., i, 518.
- Diphenylethylcyclohexanone** and -hexanol peroxide (KOHLENER and DOVER), 1907, A., i, 537.
- 2:6-Diphenyl-3-ethylcyclohexan-4-one-1-carboxylic acid**, ethyl ester (DIECKMANN), 1912, A., i, 858.
- 1:5-Diphenyl-2-ethyl- Δ^1 -cyclohexen-3-one** (DIECKMANN), 1912, A., i, 858.
- 2:4-Diphenyl-1-ethyl- Δ^1 -cyclohexen-6-one** (DIECKMANN), 1912, A., i, 858.
- 2:6-Diphenyl-3-ethyl- Δ^2 -cyclohexen-4-one-1-carboxylic acid**, ethyl ester (DIECKMANN), 1912, A., i, 858.
- 2:4-Diphenyl-1-ethyl- Δ^4 -cyclohexen-6-one-1-carboxylic acid**, ethyl ester (DIECKMANN), 1912, A., i, 858.
- Diphenylethyl cyclohexyl ketone** (KOHLENER and BURNLEY), 1910, A., i, 392.
- 5:5-Diphenyl-3-ethylhydantoin** (BILTZ and RIMPEL), 1908, A., i, 463.
- Diphenylethylidenecyclohexene** (KOHLENER and DOVER), 1907, A., i, 537.
- 2:3-Diphenyl-1-ethylindole** (RICHARDS), 1910, T., 978.
- Diphenyl-*N*-ethylmaleinimide**, β -bromo- (BARTHOLDY), 1907, A., i, 1044.
- $\delta\gamma$ -Diphenylethylmalonic acid** (KOHLENER and REIMER), 1905, A., i, 348.
- $\beta\beta$ -Diphenylethyl methyl ketone** and its oximes (KOHLENER), 1907, A., i, 1051.
- β -Diphenylethyl-1-phenyl- ψ -dithiobisret** (BILLETER and RIVIER), 1905, A., i, 50.
- Diphenylethylphosphine sulphide** (ARBUSOFF), 1911, A., i, 100.
- 2:6-Diphenyl-1-ethylpiperidine** (SCHOLTZ), 1911, A., i, 327.
- 2:6-Diphenyl-1-ethylpiperidone-3:5-dicarboxylic acid**, ethyl ester, and its hydrochloride, and an isomeride of, and its salts with acids (PETRENKO-KRITSCHENKO and HIRSCHBERG), 1909, A., i, 960.

$\beta\beta$ -Diphenyl- α -ethylpropionic acid, synthesis of, and its amide and anilide (EYKMAN), 1908, A., i, 796.

1:4-Diphenyl-3-ethylpyrazolone (DIMROTH and FEUCHTER), 1903, A., i, 630.

2:6-Diphenyl-1-ethylpyridone (PETRENKO-KRITSCHENKO and MALACHOFF), 1909, A., i, 960.

2:6-Diphenyl-1-ethylpyridone-3:5-dicarboxylic acid and its ethyl ester and silver salt (PETRENKO-KRITSCHENKO and MALACHOFF), 1909, A., i, 960.

$\alpha\beta$ -Diphenylethylsemicarbazide and its derivatives (RUPE and OESTREICHER), 1912, A., i, 221.

Diphenylethylsilicyl chloride (KIPPING), 1907, T., 218.

and oxide (MARSDEN and KIPPING), 1908, T., 207; P., 12.

***ac*-Diphenyl-1-ethyl- ψ -dithiobiuret** (JOHNSON and CRAMER), 1903, A., i, 753.

Diphenylethylthiosemicarbazide (KNORR and WEIDEL), 1909, A., i, 966.

Diphenylethyltriazole, hydroxy-, and its acetate (RUPE and METZ), 1903, A., i, 537.

1:4-Diphenyl-2-ethylurazole (WHEELER and STATIROPOULOS), 1905, A., i, 721.

9:9-Diphenylfluorene. See Diphenylbiphenylenemethane.

Diphenylformamidine dibenzoate (HELLER and KÜHN), 1904, A., i, 943.

Diphenylformamidine, *pp*-dibromo- (DAINS and BROWN), 1909, A., i, 781.

Diphenylformazyloformic acid, ethyl ester (RABISCHONG), 1904, A., i, 273.

Diphenylformazyloxalic acid, ethylester (RABISCHONG), 1904, A., i, 273.

Diphenylfulgide, a product of the action of light on (STOBBE, KEDING, NAÓUM, and v. VIGIER), 1907, A., i, 769.

Diphenylfulvene bromides (THIELE and BALHORN), 1906, A., i, 640.

3:4-Diphenylfuran-2-carboxylic acid (HINSBERG), 1912, A., i, 895.

Diphenylfurazan (WIELAND and SEMPER), 1908, A., i, 103.

Diphenyl-2-furylcarbinol and its methyl ether (HALE, McNALLY, and PATER), 1906, A., i, 199.

$\delta\delta$ -Diphenyl- α -furyl-fulgenic acid and -fulgide (STOBBE and ECKERT), 1906, A., i, 101.

1:1-Diphenyl-*d*-galactohexitol, preparation of (PAAL and WEIDENKAFF), 1906, A., i, 802.

$\alpha\beta$ -Diphenylglutaric acid and its ethyl ester (BORSCHKE), 1910, A., i, 35.

and its silver salt and anilide (AVERY and McDOLLE), 1908, A., i, 344.

***r-aa*-Diphenylglycerol** (PAAL and ZAHN), 1907, A., i, 522.

Diphenylglycidic acid and its ethyl ester (POINTET), 1909, A., i, 234.

Diphenylglycine-*o*-carboxylic acid (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 319.

Diphenylglycollic acid. See Benzilic acid.

Diphenylglycollide (EINHORN and METTLER), 1903, A., i, 30.

Diphenylglyoxaline, reduction of (BILTZ and KREBS), 1912, A., i, 909.

4:5-Diphenylglyoxaline and 1-ethyl and 1:3-diethyl derivatives and their additive salts (PINNER), 1905, A., i, 476.

and 2-chloro-, and their 3-acetyl derivative and salts (BILTZ), 1907, A., i, 646.

reduction of (BILTZ), 1912, A., i, 907. hydrochloride (PINNER), 1903, A., i, 123.

4:5-Diphenylglyoxalone and its diacetyl and dibenzoyl derivatives (BILTZ, ARND, and STELLBAUM), 1905, A., i, 674.

bromination of (BILTZ and RIMPEL), 1908, A., i, 573; (BILTZ), 1908, A., i, 575.

4:5-Diphenylglyoxalone, *pp*-dibromo- (BILTZ), 1909, A., i, 839.

Diphenylguanidine, dihydroxy-, and its hydrobromide (WIELAND), 1904, A., i, 628.

Diphenylguanidinedi-*o*-carboxylic acid and its amide (KÖNIG), 1904, A., i, 297.

1-Diphenylguanyl-4-phenylsemicarbazide. See Phenylcarbamylidiphenylguanidine.

$\gamma\epsilon$ -Diphenyl- $\Delta^{\beta\delta}$ -heptadiene (REYNOLDS), 1910, A., i, 858.

$\alpha\epsilon$ -Diphenyl- $\Delta^{\alpha\gamma}$ -heptadien- ϵ -ol (BAUER), 1905, A., i, 278.

Diphenylheptane, di-*p*-hydroxy-, and its dibenzoyl derivative and dimethyl ether (LUNIAK), 1904, A., i, 495.

$\alpha\alpha$ -Diphenylheptane and -heptylene, and the bromo-derivatives of the latter (KLAGES and HEILMANN), 1904, A., i, 488.

$\alpha\eta$ -Diphenylheptan- γ -one and its derivatives (BORSCHKE), 1912, A., i, 194.

Diphenylheptenedilactone and its isomeride (FITTIG and BOCK), 1904, A., i, 745.

Diphenylheptenelactonic acid, hydroxy-, and its salts (FITTIG and BOCK), 1904, A., i, 745.

$\alpha\epsilon$ -Diphenyl- $\Delta\alpha$ -hepten- γ -one and its oxime (KÖHLER), 1907, A., i, 1052.

- Diphenylheptolactone and its ω -bromo-derivatives (FITTIG and BOCK), 1904, A., i, 746.
- $\beta\delta$ -Diphenyl- β -heptolactone, δ -hydroxy- (KOHLEH), 1911, A., i, 986.
- Diphenylheptolactonic acid, hydroxy-, and its salts (FITTIG and BOCK), 1904, A., i, 746.
- Diphenyl-2:2':4:4':6:6'-hexacarboxylic acid and its methyl ester (LIEBERMANN and KARDOS), 1912, A., i, 466.
- $\alpha\zeta$ -Diphenyl- Δ^{ac} -hexadiene, and its tetrabromide (RUPE and BÜRGIN), 1910, A., i, 161.
- Diphenylhexahydroretene (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- $\alpha\alpha$ -Diphenylhexane, $\alpha\beta\gamma\delta\epsilon\zeta$ -hexahydroxy- (PAAL and HÖRNSTEIN), 1906, A., i, 401.
- $\alpha\zeta$ -Diphenylhexane (v. BRAUN and DEUTSCH), 1912, A., i, 687.
- $\gamma\delta$ -Diphenylhexane and β -one (KOHLEH), 1906, A., i, 428.
- Diphenyldicyclohexane (DOEBNER and SCHMIDT), 1907, A., i, 204.
- 1:2-Diphenylcyclohexane-3:5-dione (BORSCHKE), 1910, A., i, 36.
- $\beta\beta$ -Dimethylhexanetricarboxylic acid and its ethyl ester (BLANC), 1906, A., i, 399.
- 2:4-Diphenylcyclohexan-4-ol-6-one-1-carboxylic acid, ethyl ester, and the corresponding pyrazolone (DIECKMANN and v. FISCHER), 1911, A., i, 451.
- 2:6-Diphenylcyclohexan-2-ol-4-one-1-carboxylic acid, ethyl ester (DIECKMANN and v. FISCHER), 1911, A., i, 451.
- Diphenylcyclohexanone and its oxime (KOHLEH and DOVER), 1907, A., i, 537.
- Diphenylhexatriene, synthesis of (SMEDLEY), 1907, P., 162.
- and allied hydrocarbons, refractive power of (SMEDLEY), 1907, P., 295.
- and allied hydrocarbons, synthesis and refractive power of, and its hexabromide (SMEDLEY), 1908, T., 372.
- $\alpha\delta$ -Diphenyl- $\Delta\alpha$ -hexene, and its hydrobromide (RUPE and BÜRGIN), 1910, A., i, 161.
- 2:6-Diphenyl- Δ^1 -cyclohexene-3:4-dione-1-carboxylic acid, ethyl ester, phenylhydrazones of (DIECKMANN), 1911, A., i, 450.
- $\gamma\delta$ -Diphenyl- $\Delta\beta$ -hexen- $\alpha\epsilon$ -olid- ϵ -carboxylic acid and β -bromo-, and its ethyl ester (BESCHKE, KÖHRES, and STOLL), 1912, A., i, 890.
- 1:3-Diphenylcyclohexen-5-one, and its phenylhydrazones (KNOFVENAGEL and ERLER), 1903, A., i, 637.
- 3:4-Diphenyl- Δ^2 -cyclohexenone, 4-hydroxy-, 5-aryl derivatives of, and their oximes (GARNER), 1904, A., i, 252.
- 2:6-Diphenylcyclohexen-4-one-1-carboxylic acid, ethyl ester, isomeric forms of (DIECKMANN), 1911, A., i, 450.
- $\beta\epsilon$ -Diphenyl- $\Delta\gamma$ -hexinene- $\beta\epsilon$ -diol and its dibromides (DUPONT), 1910, A., i, 379.
- Diphenylhexylcarbinol (KLAGES and HEILMANN), 1904, A., i, 488.
- 4:5-Diphenyl-2-hexylglyoxaline and its salts and methyl ether (RADZISZEWSKI and JAKALO), 1909, A., i, 422.
- Diphenylhexylmethane (SCHMIDLIN and v. ESCHER), 1912, A., i, 437.
- Diphenylhistidine, 2:4-dinitro- (ABDERHALDEN and BLUMBERG), 1910, A., i, 371.
- Diphenylhomocampholic acid, hydroxy-, and its sodium salt (HALLER), 1912, A., i, 359.
- Diphenylhomophthalide (BAUER and WÖLZ), 1911, A., i, 872.
- Diphenylhydantil (GABRIEL), 1907, A., i, 91; (PINNER), 1907, A., i, 92.
- Diphenylhydantoin, thio-, reduction of (BILTZ and SEYDEL), 1912, A., i, 909.
- 1:3-Diphenylhydantoin, 2-thio- (WHEELER and BRAUTLECHT), 1911, A., i, 501.
- 5:5-Diphenylhydantoin and *di-p*-bromo-, preparation of, and their acetyl derivatives (BILTZ and RIMPEL), 1908, A., i, 463; (BILTZ), 1908, A., i, 575.
- 5:5-Diphenylhydantoin, 1:3-dichloro- (BILTZ and BEHRENS), 1910, A., i, 589.
- Diphenylisohydantoin (HOLMBERG), 1912, A., i, 132.
- Diphenylhydrazine, crystallography of (JAEGER), 1906, A., i, 112, 642.
- oxidation of (WIELAND and WECKER), 1911, A., i, 82.
- Diphenylhydrazine, 4:6-dinitro-3-amino-, and its acetyl derivatives (FRIES and ROTH), 1912, A., i, 658.
- Diphenylhydrazones of a series of aldehydes (MAURENBRECHER), 1906, A., i, 985.
- 5:5-Diphenylhydroacridine, anhydride of, and its acetyl derivative (v. BAEYER and VILLIGER), 1904, A., i, 899.
- Diphenylhydroxyacetic acid, action of, on dimethylcarbamide (ANGELI), 1908, A., i, 462.
- Diphenylhydroxycampholic acid, its barium salt and lactone (SHIBATA), 1910, T., 1241.

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as-Diphenylhydroxycarbamide, constitution of, and its hydrate, sodium salt, and compound with acetaldehyde (CONDUCHÉ), 1908, A., i, 155.

Diphenyl-4-hydroxy-3-carbomethoxy-naphthylacetic acid and its dimethyl ester (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 467.

Diphenyl-4-hydroxy-3-carboxynaphthyl-acetic acid (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 467.

Diphenyl 4-hydroxy-3-carboxynaphthyl-carbinol (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 467.

Diphenyl-4-hydroxy-3-carboxynaphthyl-methane (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 467.

*iso*Diphenylhydroxyethylamines, derivatives of racemic and optically active (ERLENMEYER and ARNOLD), 1905, A., i, 193.

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2:4-dinitro- and *p*-nitroso-, and their *aci*-forms, and the methyl ether of the *p*-nitroso- compound (WIELAND and GAMBARJAN), 1906, A., i, 830.

$\beta\beta$ -Diphenylhydroxylamine (WIELAND and ROSEU), 1912, A., i, 253.

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4:5-Diphenyl-2-hydroxymethoxyphenyl-glyoxaline and its hydrochloride, platinichloride, and methyl ether (RADZISZEWSKI and ROHM), 1909, A., i, 422.

Diphenylhydroxynaphthylacetic acids, lactones of, and their bromo-derivatives (GEIPERT), 1904, A., i, 319.

Diphenyl-2-hydroxy-9-phenylanthranol-acetic acid, lactone of, and its dimethyl and trinitro-derivatives and potassium salts (v. LIEBIG and KEIM), 1908, A., i, 449.

Diphenyl 1:3- and 1:4-di-hydroxyphenyl-ene diketones and their bisphenyl-hydrazones (TORREY and KIPPER), 1907, A., i, 326.

1:3-Diphenyl-5-*o*-hydroxyphenylpyr-azoline, and its monobenzoyl derivative (AUWERS and VOSS), 1910, A., i, 71.

Diphenylhydroxystibine, *di*-*m*-amino-, and its hydrochloride (MORGAN and MICKLETHWAIT), 1912, P., 20.

Diphenyl-6-hydroxy-*m*-tolylcarbinol and its ethyl ether and isomeride (BISTRZYCKI and HERBST), 1904, A., i, 44.

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2:5-Diphenylimino-3:4-diphenyltetrahydro-1:3:4-thiadiazole (HUGERSHOFF), 1903, A., i, 865.

2:3-Diphenylindene, and 1-bromo-, and oximino- (THIELE and RUGGLI), 1912, A., i, 867.

2:3-Diphenylisoidolinone, 3-hydroxy- (BÉIS), 1906, A., i, 884.

Diphenyliodinium perchlorate (HOFMANN, ROTH, HÖBOLD, and METZLER), 1910, A., i, 819.

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Diphenylitaconic acid, transformations of (FITTIG and RIECHE), 1904, A., i, 421.

γ -Diphenylitaconic acid, α -ethyl β -hydrogen ester (STOBBE), 1911, A., i, 540.

Diphenylketon and its anilide, amide, and phenylhydrazide (STAUDINGER), 1905, A., i, 444.

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Diphenylketen, action of, on nitroso-compounds (STAUDINGER and JELAGIN), 1911, A., i, 215.

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Diphenylmaleic acid (JAPP and MICHIE), 1903, T., 279.

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Diphenylmaleylglycine, ethyl ester (BARTHOLDY), 1907, A., i, 1044.

Diphenylmenthylmethane (BÖDTKER), 1907, A., i, 858.

Diphenylmethane, preparation of (NASTUKOFF), 1904, A., i, 242; 1909, A., i, 19.

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2:4:2':4'-tetraamino-, and its dibenzoyl derivative (DUVAL), 1906, A., i, 314.

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ψ -pentabromo- and ψ -pentachloro-*p*-dihydroxy-, and its diacetate (ZINCKE and BIRSCHER), 1908, A., i, 782.

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Diphenylmethane colouring matters, basic (v. BRAUN), 1904, A., i, 344; (v. BRAUN and KAYSER), 1904, A., i, 687.

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Diphenylmethane-4:4'-dicarboxylic acid, methyl ester, and dinitro- (LIEBERMANN and MITTER), 1912, A., i, 466.

Diphenylmethane-4:4'-dicarboxylic acid, diamino- and dinitro-, and their ethyl esters (DUVAL), 1905, A., i, 651.

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4:4'-Diphenylmethanediglycine and 3:3'-dinitro- (NEUMÜLLER), 1908, A., i, 369.

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$\delta\delta$ -Diphenyl- α -o-methoxyphenylfulgenic acid, methyl ester (STOBBE and REDLIEN), 1911, A., i, 380.

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- $\alpha\beta$ -Diphenyl- β -methylallylamine and its additive salts (HENRICH and WIRTH), 1904, A., i, 751.
- Diphenylmethylamine, preparation of, and its picrate (BILTZ and SEYDEL), 1911, A., i, 281.
- bromo-derivatives, and their perbromides (FRIES), 1906, A., i, 649.
- Diphenylmethylamine, hydroxythio- (HILDITCH and SMILES), 1912, T., 2296.
- hexanitro- (MULDER), 1906, A., i, 493.
- Diphenylmethylamine-2'-carboxylic acid, 2:4-dinitro- (HOUBEN, ARENDT, and ETTINGER), 1911, A., i, 129.
- $\alpha\alpha$ -Diphenyl- δ -methyl- $\Delta\alpha$ -amylenes (SCHORIGIN), 1908, A., i, 866.
- 1:4-Diphenyl-5-methyl-3:5-*endo*anilo-4:5-dihydro-1:2:4-triazole (BUSCH and MEHRTENS), 1906, A., i, 117.
- 9:10-Diphenyl-2-methylanthracene (GUYOT and STAEBLING), 1905, A., i, 886.
- 3:4-Diphenyl-6-methylaziminopyrazole (MICHAELIS and RISSE), 1911, A., i, 1037.
- Diphenylmethylbenzocycloheptanol (THIELE and WEITZ), 1910, A., i, 854.
- Diphenyl-*p*-methylbenzylcarbinol (CICAMICIAN and SILBER), 1910, A., i, 489.
- $\gamma\delta$ -Diphenyl- β -methyl- $\Delta\gamma$ -buten- β -ol (KÖHLER and HERITAGE), 1905, A., i, 209.
- $\alpha\delta$ -Diphenyl-*p*-methyl- $\Delta\alpha$ -butylene (ORECHOFF and MEERSON), 1912, A., i, 621.
- $\alpha\beta$ -Diphenyl- α -methylbutyric acid (RAMART-LUCAS), 1912, A., i, 623.
- $\alpha\alpha$ -Diphenyl- β -methylbutyric acid and its anhydride and nitrile (RAMART-LUCAS), 1912, A., i, 556.
- Diphenylmethylcarbinol (PAAL and HÖRNSTEIN), 1906, A., i, 401.
- Diphenylmethylcarbinol, *o*-amino- (STOERMER and FINCKE), 1909, A., i, 841.
- p*-hydroxy-, and its diacetate, and tribromo-derivative (ZINCKE and WUGK), 1909, A., i, 25.
- Diphenylmethylcarbinyl acetate, *o*-amino-, acetyl derivative (STOERMER and FINCKE), 1909, A., i, 841.
- 2:3-Diphenyl-1-methyl- Δ^1 -croto lactone. See 5-Keto-2:3-diphenyl-4-methyl-2:5-dihydrofuran.
- 9:10-Diphenyl-2-methyldihydroanthracene and 9:10-dihydroxy-, and its dichloride and dimethyl and diethyl esters (GUYOT and STAEBLING), 1905, A., i, 885.
- 4:5-Diphenyl-1-methyldihydroglyoxal-one, 4:5-dihydroxy-, and its *syn*- and *anti*-dimethyl ethers (BILTZ and RIMPEL), 1909, A., i, 743.
- 1:5-Diphenyl-2-methyl- $\Delta^{2:5}$ -dihydropyridazine-3-carboxylic acid and its ethyl ester (BORSCHKE and SPANNAGEL), 1904, A., i, 778.
- 3:4-Diphenyl-6-methyldihydropyrazofurazan (MICHAELIS and RISSE), 1911, A., i, 1037.
- 2:6-Diphenyl-4-methyldihydropyridine, 3:5-dicyano- (v. MEYER and KLEINSTÜCK), 1908, A., i, 910.
- Diphenylmethyldihydropyrimidine, and *m*-amino- and *m*-nitro- (RUHEMANN), 1903, T., 1374 ; P., 247.
- 1:4-Diphenyl-3-methyldipyrazole and its bromo-, nitro-, acetyl-, and benzoyl-derivatives (MICHAELIS and BENDER), 1903, A., i, 289.
- Diphenylmethyldithiolcarbonateacetic acid (BILMANN), 1908, A., i, 143.
- Diphenylmethylene-*p*-aminophenol (REDDELIEN), 1910, A., i, 118.
- Diphenylmethyleneaniline, preparation of (REDDELIEN), 1910, A., i, 118.
- Diphenylmethylenanthraquinone (PAĐOVA), 1906, A., i, 742.
- 3-Diphenylmethylenediamine, action of, on phenylthiocarbimide (SENIER and SHEPHEARD), 1909, T., 498.
- 8-Diphenylmethylenediamine, *di-m*- and *p*-bromo- (HOUBEN and ARNOLD), 1908, A., i, 534.
- Diphenylmethylenedimethyl-*p*-phenylenediamine (REDDELIEN), 1910, A., i, 118.
- $\alpha\gamma$ -Diphenyl- δ -*mp*-methylenedioxyphenyl- β -butanone, δ -chloro-, and $\Delta\gamma$ -buten- β -one (HERTZKA), 1905, A., i, 291.
- 2:6-Diphenyl-4-methylenedioxyphenylpyridine, 3-cyano- (v. MEYER and IRMSCHER), 1908, A., i, 912.
- Diphenylmethylene-*m*-nitroaniline (REDDELIEN), 1910, A., i, 118.
- 4-Diphenylmethylenequinone and 2:6-dibromo- (AUWERS and SCHROETER), 1903, A., i, 820.
- Diphenylmethylene-*m* and *p*-toluidine (REDDELIEN), 1910, A., i, 118.
- Diphenylmethylene-3:4-xylidine (REDDELIEN), 1910, A., i, 118.

- $\alpha\delta$ -Diphenyl- δ -methylfulgenic acid** and its ethyl hydrogen ester (STOBBE and ROSE), 1911, A., i, 376.
- $\alpha\delta$ -Diphenyl- δ -methylfulgide** (STOBBE and ROSE), 1911, A., i, 376.
- $\alpha'\beta$ -Diphenyl- α -methylglutaric acid, $\alpha'\beta$ -*di*hydroxy-** (JAPP and MICHIE), 1903, T., 281; P., 21.
- 4:5-Diphenyl-1-methylglyoxaline** (PINNER), 1903, A., i, 123.
- 5:5-Diphenyl-3-methylglyoxalone, *di*-bromo-** (BILTZ and BEHRENS), 1910, A., i, 590.
- 4:5-Diphenyl-1-methylglyoxalone-4:5-oxide.** See 5:5-Diphenyl-3-methylhydantoin.*
- $\alpha\gamma$ -Diphenyl- ϵ -methylhexane- $\beta\delta\epsilon$ -triol** (SPÄTH), 1912, A., i, 979.
- $\alpha\xi$ -Diphenyl- ϵ -methyl- $\Delta^{\alpha\epsilon}$ -hexatriene** (BAUER), 1905, A., i, 278.
- 5:5-Diphenyl-3-methylhydantoin** and its 1-formyl derivative (BILTZ, HORMANN, and RIMPEL), 1908, A., i, 218; (BILTZ and RIMPEL), 1908, A., i, 463.
- 5:5-Diphenyl-3-methylhydantoin, 1-chloro-** (BILTZ and BEHRENS), 1910, A., i, 589.
- Diphenyl- α -methylindolidenemethane hydrochloride** (FREUND and LEBACH), 1905, A., i, 666.
- $\gamma\gamma$ -Diphenyl- α -methylitaconic acid, anhydride and bromide** (STOBBE and GOLLÜCKE), 1906, A., i, 361; (STOBBE and NOETZEL), 1906, A., i, 362.
- $\beta\beta$ -Diphenylmethylmalonamic acid** (KÖHLER and REIMER), 1905, A., i, 347.
- Diphenylmethylmalonic acid** and its salts, esters, and derivatives (KÖHLER), 1905, A., i, 700.
- potassium ethyl salt** (REYNOLDS), 1910, A., i, 858.
- 1-Diphenylmethyl-5-methyltriazole, 3-hydroxy-** (RUPE and OESTREICHER), 1912, A., i, 221.
- 8-Diphenylmethyl-naphthalene-1-carboxylic acid** (BESCHKE and KITAJ), 1909, A., i, 918.
- 8-Diphenylmethyl-1-naphthoic acid and *dichloro*-** (ZUFFA), 1910, A., i, 861.
- 1:3-Diphenyl-7-methyloctahydroindene, 1:9-*di*hydroxy-, anhydride and its derivatives** (ROSENBERG), 1912, A., i, 783.
- Diphenylmethylolid, *pentahydroxy*-, (*glaucohydroellagic acid*)** (NIERENSTEIN), 1908, A., i, 548.
- and its penta-acetyl and penta-benzoyl derivatives** (PERKIN and NIERENSTEIN), 1905, T., 1425; P., 186.
- Diphenylmethylolid, *hexahydroxy*-, and its acetyl and benzoyl derivatives** (PERKIN), 1906, T., 253; P., 42.
- Diphenylmethylolidcarboxylic acid, *pentahydroxy*-** (NIERENSTEIN), 1908, A., i, 897.
- 2:2-Diphenyl-5-methyloltetrahydrofuran, 3:4-*di*hydroxy-** (PAAL and KINSCHER), 1912, A., i, 31.
- 2:5-Diphenyl-4-methyloxazole** (LISTER and ROBINSON), 1912, T., 1315.
- $\gamma\gamma$ -Diphenyl- α -methylparaconic acid β -bromo-** (STOBBE and NOETZEL), 1906, A., i, 362.
- $\alpha\alpha$ -Diphenyl- δ -methylpentan- γ -one and its oximes and β -bromo-derivative** (KÖHLER), 1907, A., i, 1052.
- $\alpha\alpha$ -Diphenyl- δ -methyl- Δ^{α} -penten- γ -one** (KÖHLER), 1907, A., i, 1052.
- Diphenylmethyl- α -phenylethylamine and its salts** (DE LEEUW), 1912, A., i, 24.
- Diphenylmethylphosphine oxide** (ARBUSOFF), 1910, A., i, 803.
- 2:6-Diphenyl-1-methylpiperidone-3:5-dicarboxylic acid, ethyl ester, and its derivatives** (PETRENKO-KRITSCHENKO and LEWIN), 1907, A., i, 709; (PETRENKO-KRITSCHENKO and LILLENBLUM), 1909, A., i, 960.
- $\alpha\alpha$ -Diphenyl- β -methylpropane- $\alpha\beta$ -diol** (PARRY), 1911, T., 1172; P., 141.
- Diphenyl- α -methylpropen- γ -one.** See Dypnone.
- $\beta\beta$ -Diphenyl- α -methylpropionic acid, synthesis of, and its methyl ester and amide** (EYKMAN), 1908, A., i, 795.
- $\beta\beta$ -Diphenyl- α -methylpropiophenone, α -bromo- and α -hydroxy-** (KÖHLER), 1907, A., i, 140.
- Diphenylmethylisopropylamine and its salts and derivatives** (DE LEEUW), 1912, A., i, 24.
- 2:4-Diphenyl-6(or 8)methyl-1(or 5)-isopropylbicyclononan-9-one, 4-hydroxy-, and its derivatives** (STOBBE and ROSENBERG), 1912, A., i, 785.
- Diphenylmethyl propyl ether** (STADNIKOFF), 1912, A., i, 110.
- 1:5-Diphenyl-2-methylpyrazole, 3-chloro-1-*m*-nitro-** (MICHAELIS and WILLERT), 1908, A., i, 214.
- 1:4-Diphenyl-3-methylpyrazole** (STÖRMER and MARTINSEN), 1907, A., i, 446.
- 1:5-Diphenyl-3-methylpyrazole, 4-nitroso-, and its 1-*p*-bromo-, 1-*p*-nitro-, and azoxy-derivatives** (SACHS and ALSLEBEN), 1907, A., i, 358.
- 1:3-Diphenyl-6-methylpyrazole, 3-*s*-*di*-nitro-** (BEREND and HEYMAN), 1904, A., i, 671.

* A correction: not a synonym.

- 1:3-Diphenyl-5-methylpyrazole-4-carboxylic acid** and its nitro-derivatives and their ethyl esters (MINUNNI and LAZZARINI), 1906, A., i, 385.
- hydroxy-**. See 1-Phenyl-3-hydroxyphenyl-5-methylpyrazole-4-carboxylic acid.
- 1:5-Diphenyl-3-methylpyrazoleimino-3'-phenylisooxazolone** (MEYER), 1911, A., i, 687.
- 1:5-Diphenyl-3-methylpyrazoline** (KÖHLER and REIMER), 1904, A., i, 234.
- 1:3-Diphenyl-5-methylpyrazoline** (KÖHLER), 1909, A., i, 940.
- 1:3-Diphenyl-2-methyl-5-pyrazolone, 4-hydroxy-**, and its methyl ether and benzoate (SACHS and BECHERESCU), 1903, A., i, 530.
- 1-m-nitro-**, and its nitroso-derivative (MICHAELIS and WILLERT), 1908, A., i, 216.
- 4:6-Diphenyl-2-methylpyridine** and its 3-carboxylic acid and 3-cyano- (v. MEYER and IRMSCHER), 1908, A., i, 911.
- 2:6-Diphenyl-1-methylpyridone** and its hydrochloride and platinichloride (PETRENKO-KRITSCHENKO and LILIENBLÜM), 1909, A., i, 960.
- 2:6-Diphenyl-1-methylpyridone-3:5-dicarboxylic acid** and an isomeric acid, and their ethyl esters (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1909, A., i, 606.
- 1:2-Diphenyl-5-methylpyrrole** and its 3-carboxylic acid and its ethyl ester (BORSCHKE and FELS), 1906, A., i, 509.
- 3-Diphenyl-2-methyl-4-quinazolone, 4'-amino-, 4'-amino-7-acetyl-amino-**, and 6-bromo-4'-amino- (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.
- 2:3-Diphenyl-6-methylquinoline-4-carboxylic acid** (FARBENFABRIKEN VORM. F. BAYER & CO.), 1912, A., i, 1018.
- ω -Diphenyl-2-methylquinomethane** (BISTRZYCKI and ZURBRIGGEN; BISTRZYCKI and HERBST), 1904, A., i, 44.
- α -Diphenylmethylsemicarbazide** and its derivatives (RUPE and OESTREICHER), 1912, A., i, 220.
- α -Diphenyl- α -methylsemicarbazide** (BACKER), 1912, A., i, 732.
- β -Diphenyl- α -methylsemicarbazide**, and its thiocarbonyl chloride (BUSCH and LIMPACH), 1911, A., i, 385.
- α -Diphenyl- β -methylsemicarbazide** (BUSCH and LIMPACH), 1911, A., i, 335.
- Diphenylmethylsuccinic acid**, synthesis of (EYKMAN), 1905, A., i, 528.
- Diphenylmethylsulphine** and its additive salts (KEHRMANN and DUTTENHÖFER), 1906, A., i, 885.
- Diphenylmethyltetrahydro- γ -pyrones**, stereoisomeric (JAPP and MAITLAND), 1904, T., 1488; P., 204.
- 2:4-Diphenyl-7-(or 5)-methyl-Bz-tetrahydroquinoline**, synthesis of, and its salts (STOBBE and HELLER), 1903, A., i, 115.
- Diphenyl-mono- and dimethyl- ψ -dithiobiurets** (JOHNSON and ELMER), 1903, A., i, 752.
- 5:5-Diphenyl-2- and -3-methylthiohydantoin** (BILTZ, KREBS, and SEYDEL), 1909, A., i, 526.
- 1:3-Diphenyl-2-methyl-5-thiopyrazolone** and its 1-m-nitro-derivative (MICHAELIS and WILLERT), 1908, A., i, 215.
- 1:5-Diphenyl-2-methyl-3-thiopyrazolone** and its derivatives (MICHAELIS and WILLERT), 1908, A., i, 214.
- Diphenylmethylthiosemicarbazide** (KNORR and WEIDEL), 1909, A., i, 965.
- β -Diphenyl- α -methylthiosemicarbazide** (BUSCH and LIMPACH), 1911, A., i, 334.
- Diphenylmethyltriazole**, *endothio-* (BUSCH, OFFERMANN, and WALTHER), 1904, A., i, 630.
- 1-Diphenylmethyltriazole, 3-hydroxy-** (RUPE and OESTREICHER), 1912, A., i, 221.
- β -Diphenylmuconic acid**, ethyl esters of (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), 1911, A., i, 874.
- β -Diphenylmuconic acid, α -bromo-**, ethyl esters (BESCHKE, KÖHRES, and STOLL), 1912, A., i, 891.
- 2:8-Diphenyl-(1:5)-naphthadiquinoline-4:10-dicarboxylic acid** (FINGER and SPITZ), 1909, A., i, 524.
- 2:5-Diphenyl- α -naphthafuran** (PAAL and SCHULZE), 1903, A., i, 710.
- 2:3-Diphenylnaphthalene-4-carboxylamide, 1-cyano-** (HINSBERG), 1910, A., i, 486.
- Diphenylnaphthalide** (ZSUFFA), 1910, A., i, 862.
- 2:3-Diphenylnaphthapyronium ferri-chloride** and picrates of carbinol derivative (DECKER and v. FELLEBERG), 1909, A., i, 117.
- 2:3-Diphenyl- β -naphthaquinoline** (BORSCHKE), 1909, A., i, 956.
- 2:3-Diphenyl- β -naphthaquinoline-1-carboxylic acid** (BORSCHKE), 1909, A., i, 956.

- ωω-Diphenyl-1:4-naphthaquinomethane** (ZALESKA-MAZURKIEWICZ and BIS-TRZYCKI), 1912, A., i, 467.
- Diphenyl-α-naphthenylamidine** (BUSCH and HOBEIN), 1907, A., i, 1075.
- αγ-Diphenyl-γ-1-naphthylallene-α-carboxylic acid** and its ethyl ester (LAPWORTH and WECHSLER), 1909, P., 307; 1910, T., 44.
- αγ-Diphenyl-γ-1-naphthylbutyrolactone** (LAPWORTH and WECHSLER), 1910, T., 42.
- Diphenyl-α- and -β-naphthylcarbinols** (ULLMANN and MOURAWIEW-WINIGRADOFF), 1905, A., i, 642.
- Diphenyl-α-naphthylchloromethane** and its peroxide (GOMBERG and CONE), 1904, A., i, 490.
- Diphenyl-α-naphthylglycol** (ACREE), 1904, A., i, 743.
- 4:5-Diphenyl-2-α-naphthylglyoxaline** and its hydrochloride, platinichloride, and methyl ether (RADZISZEWSKI and ROHM), 1909, A., i, 422.
- Diphenyl-α-naphthylmethane** (ZSUFFA), 1910, A., i, 861.
- Diphenylnaphthylmethane** colouring matters (NOELTING), 1904, A., i, 621.
- αβ-Diphenyl-β-1-naphthylpropionic acid** and its methyl esters (KÖHLER and HERITAGE), 1905, A., i, 208.
- Diphenyl-m-nitrobenzylidenebenzenyl-hydrazidine** (BUSCH and RUPPENTHAL), 1911, A., i, 87.
- 1:3-Diphenyl-5-o-nitrobenzylidene-2-thiobarbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 122.
- 1:3-Diphenyl-5-m- and -p-nitrophenyl-pyrazoline** (AUWERS and VOSS), 1910, A., i, 71.
- Diphenylnitrosoamine**, transformation of, into *p*-nitrosodiphenylamine (RAKEN), 1904, A., i, 155.
- decomposition of, by heat (MARQUEYROL and FLORENTIN), 1912, A., i, 759.
- reactions of (LACHMAN), 1903, A., i, 295.
- Diphenylnitrosoamine**, *o*- and *p*-mono- and 2:4'- and 4:4'-dinitro- (JUILLARD), 1906, A., i, 12.
- Diphenylnitrosuccinonitrile**, *di-p*-bromo- (WISLICENUS and ELVERT), 1909, A., i, 30.
- αi-Diphenylnonan-ε-one** and its derivatives (BORSCHKE), 1912, A., i, 194.
- γγ-Diphenylnonan-ε-one** (KÖHLER), 1907, A., i, 1053.
- αi-Diphenyl-Δ³δ⁵ε-nonatetren-α-one** and its acetal (STRAUS), 1912, A., i, 992.
- αθ-Diphenyloctane** (v. BRAUN and DEUTSCH), 1912, A., i, 688.
- Diphenyltricyclooctane** (DOEBNER and SCHMIDT), 1907, A., i, 204.
- Diphenyloctatetrenes**, white and yellow, photochemical reactions of (STOBBE), 1909, A., i, 219.
- Diphenyloctenedilactone** (FITTIG and STADLMAYER), 1904, A., i, 969.
- Diphenyloctolactonic acid** and its salts (FITTIG and HADORFF), 1904, A., i, 968.
- 2:5-Diphenyl-1:3:4-oxadiazole** (STOLLÉ and THOMAE), 1906, A., i, 462.
- chloriodide and hydrobromide (STOLLÉ), 1912, A., i, 505.
- 2:5-Diphenyl-1:3:4-oxadiazole**, *di-o*-, *m*-, and *p*-bromo- (STOLLÉ and JOHANNISSIEN), 1904, A., i, 694.
- di-m*-chloro- (STOLLÉ and FOERSTER), 1904, A., i, 627.
- and -triazole, *di-p*-nitro- (STOLLÉ and BAMBACH), 1906, A., i, 711.
- Diphenyloxalimino-chloride** and its reactions (BAUER), 1907, A., i, 603.
- Diphenyloxalimino-chloride**, *di-o*-bromo- (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 319.
- Diphenyloxalimino-chloride-pyridinium chloride** (REITZENSTEIN and BREUNING), 1911, A., i, 226.
- Diphenyloxaluric acid**, ethyl and methyl esters, ethyl and methyl iso-ethers of (LANDER), 1907, T., 970; P., 149.
- Diphenyloxamic acid**, phenyl ester (BISCHOFF and v. HEDENSTRÖM), 1903, A., i, 26.
- Diphenyl-4-oxamic acid**, 4'-amino-, 4'-bromo-, 4'-chloro-, 4'-hydroxy-, and 4'-iodo-, and their ammonium salts (GELMO), 1907, A., i, 31.
- 4'-amino-, 3-nitro-4'-amino-, and 3'-nitro-4'-amino-, and their *N*-acetyl derivatives (NEUMÜLLER), 1908, A., i, 369.
- 2:5-Diphenyloxazole**, synthesis of (ROBINSON), 1909, T., 2169; P., 295.
- 2:5-Diphenyloxazole**, 4-chloro- (GABRIEL), 1910, A., i, 190.
- 3:5-Diphenylisooxazole** (MOUREU and BRACHIN), 1904, A., i, 96.
- 3:5-Diphenylisooxazole**, *p*-amino-, and *p*-4-diamino-, and its diacetyl derivative, and *p*-nitro- and *p*-4-dinitro- (WIELAND), 1903, A., i, 766.
- p*-nitro- (WIELAND), 1904, A., i, 433.
- 3:3-Diphenylisooxazolidone** (POSNER and STIRNUS), 1912, A., i, 457.

- Diphenyloxazolone** (MASELLI), 1905, A., i, 776.
- 3:4-Diphenylisooxazolone**, 4-*p*-chloro- (V. WALTHER and HIRSCHBERG), 1903, A., i, 494.
- Diphenyloxide-3-sulphonic acid**, *p*-amino- (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 658.
- Diphenyloxythiophosphinic acid**, ethyl ester (ARBUSOFF), 1911, A., i, 100.
- Diphenylparabanamide**, carbanilide of (DIECKMANN and KÄMMERER), 1907, A., i, 979.
- γ -Diphenylparaconic acid**, β -bromo- (STOBBE), 1911, A., i, 540.
- $\alpha\epsilon$ -Diphenyl- $\Delta^{\alpha\gamma}$ -pentadiene**, $\gamma\epsilon$ -*di*-chloro- (STRAUS), 1912, A., i, 989.
- $\alpha\epsilon$ -Diphenyl- $\Delta^{\beta\delta}$ -pentadiene**, $\alpha\epsilon$ -*di*-chloro-, *di-p*-chloro-, and α - and γ -chloro-*di-p*-chloro-, and their derivatives (STRAUS), 1912, A., i, 991.
- $\beta\epsilon$ -Diphenyl- $\Delta^{\beta\delta}$ -pentadiene**, γ -cyano- (HAWORTH), 1909, T., 487.
- 1:3-Diphenyl- $\Delta^{1:3}$ -cyclopentadiene** (BORSCHKE and MENZ), 1908, A., i, 150.
- $\beta\epsilon$ -Diphenyl- $\beta\delta$ -pentadiene- α -carboxylic acid** (FICHTER and GRETHER), 1903, A., i, 481.
- $\alpha\epsilon$ -Diphenyl- $\Delta^{\beta\delta}$ -pentadiene- α -ol**, *di-p*-chloro- (STRAUS), 1912, A., i, 993.
- s-Diphenylpentamethylenediamine** (*s*-*diphenylcadaverine*), synthesis of, and its *mono*- and *di*-cyano-, *dinitroso*-, and dibenzoyl derivatives (V. BRAUN), 1908, A., i, 686.
- Diphenylpentamethylenedicarbamide** (V. BRAUN and DEUTSCH), 1912, A., i, 686.
- $\alpha\epsilon$ -Diphenylpentane** (V. BRAUN and DEUTSCH), 1912, A., i, 435.
- Diphenylisopentane**, *di-p*-hydroxy-, and its derivatives (IWANOFF), 1912, A., i, 761.
- Diphenylcyclopentane** and its derivatives from dibenzylideneacetone (VORLÄNDER and V. LIEBIG), 1904, A., i, 426.
- $\alpha\epsilon$ -Diphenylpentan- α -ol** (STRAUS), 1912, A., i, 991.
- $\alpha\gamma$ -Diphenylpentan- α -one** and its oxime (KÖHLER), 1907, A., i, 1053.
- $\alpha\epsilon$ -Diphenylpentan- α -one**, acetal of (STRAUS), 1912, A., i, 992.
- $\alpha\alpha$ -Diphenylpentan- γ -one** and its oximes (KÖHLER), 1907, A., i, 1052.
- $\alpha\epsilon$ -Diphenylpentan- γ -one** and its semicarbazone (SENDERENS), 1911, A., i, 303.
- $\alpha\epsilon$ -Diphenylpentan- γ -one**, *di-o*-hydroxy- (BORSCHKE), 1912, A., i, 194.
- $\beta\epsilon$ -Diphenyl- Δ^{β} -pentene**, γ -cyano- ϵ -hydroxy- (HAWORTH), 1909, T., 488.
- $\beta\epsilon$ -Diphenyl- Δ^{α} -pentene- γ -carboxylic acid**, γ -cyano- ϵ -hydroxy-, and its lactone (HAWORTH), 1909, T., 487.
- $\alpha\delta$ -Diphenyl- Δ^{α} - and $\Delta^{\beta\gamma}$ -pentenoic acid**, amyl ester (RUPE and DORSCHKY), 1909, A., i, 929.
- $\alpha\delta$ -Diphenyl- $\Delta\gamma$ -pentenoic acid**, β -amino-, and its benzoyl derivative (POSNER and ROHDE), 1910, A., i, 848.
- $\beta\delta$ -Diphenyl- $\Delta\gamma$ -pentenoic acid**, α -cyano-, ethyl ester (MACLEOD), 1910, A., i, 847.
- 1:2-Diphenyl- Δ^1 -cyclopenten-4-one**. See Stilbeneacetone.
- 9:10-Diphenylphenanthrene** (WERNER and GROB), 1904, A., i, 865; (BILTZ), 1905, A., i, 188.
- Diphenylphenanthrene** and the action of alcoholic potassium hydroxide on (ACREE), 1905, A., i, 216.
- Diphenylphenetylsulphonium** and its platinichloride (SMILES and LE ROSSIGNOL), 1906, T., 706; P., 24, 87.
- p*-Diphenylphenol** and its acetate, benzoate, bromo- and *dinitro*-derivatives and potassium salt (FICHTER and GRETHER), 1903, A., i, 481.
- 10:10-Diphenyl-1:9-*o*-phenoxylenedi-hydroanthracene** (ÜLLMANN and TSCHERNIAK), 1906, A., i, 102.
- Diphenylphenoxyethylcarbinol** (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 581.
- 1:3-Diphenyl-5-phenoxyethylpyrazole** (V. WALTHER and LITTER), 1911, A., i, 237.
- 1:4-Diphenyl-3-phenoxyethylpyrazolone**, 5-imino-, and its salts and derivatives (V. WALTHER and HERSCHEL), 1911, A., i, 237.
- 2:4-Diphenyl-3-phenoxyethylpyrazolone** (V. WALTHER and HERSCHEL), 1911, A., i, 238.
- Diphenyl *p*-phenylene disulphide** (BOURGEOIS and FOUASSIN), 1911, A., i, 964.
- 1:1-Diphenyl-3-phenylenephthalan** (SHIBATA), 1909, T., 1454; P., 209.
- $\alpha\gamma$ -Diphenyl- β -phenylglyoxalpropanedi-anil**, $\alpha\gamma$ -*di*hydroxy-, and its acetyl derivative (BORSCHKE and TITSINGH), 1910, A., i, 65.
- Diphenylphosphinic acid**, isopropyl and isobutyl esters of (ARBUSOFF), 1910, A., i, 803.
- Diphenylphosphinous acid**, ethyl, isopropyl, and isobutyl esters of (ARBUSOFF), 1910, A., i, 803.

Diphenylphosphoric amidine (CAVEN), 1903, T., 1048; P., 200.

1:3-Diphenylphthalan (NELKEN and SIMONIS), 1908, A., i, 348.

Diphenylphthalamide, *di-o*-amino- (MEYER and JAEGER), 1906, A., i, 767.

Diphenylphthalide, hydroxy-, oxime and its dibenzoate (MEYER and KISSIN), 1909, A., i, 652.

o-hydroxy- (v. BAEYER), 1907, A., i, 759.

2:5- and 3:4-*di*hydroxy-, and derivatives (v. BAEYER, AICKELIN, DIEHL, HALLENSLEBEN, and HESS), 1910, A., i, 250.

1:5-Diphenyl-4-phthalidyl-3-methylpyrazole, 1-*p*-nitro- (BÜLOW and KOCH), 1904, A., i, 322.

Diphenyl-3-phthaloylic acid, 4:4'-*di*hydroxy-, and its calcium salt (SCHOLL and SEER), 1911, A., i, 453.

N-Diphenylpiperazine, *di-m*-nitro- (BORSCHKE and TITSINGH), 1908, A., i, 104.

2:6-Diphenylpiperidone-3:5-dicarboxylic acid, diamide of (TSONEFF), 1912, A., i, 580.

esters, and their nitroso- and potassium derivatives and hydrochlorides (PETRENKO-KRITSCHENKO and ZONEFF), 1906, A., i, 452.

ethyl ester, and its derivatives (PETRENKO-KRITSCHENKO and PETROFF), 1908, A., i, 565.

potassium derivative (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1909, A., i, 605.

5:5-Diphenyl- α -piperonylbutane- $\beta\gamma$ -dicarboxylic acid and its anhydride (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), 1911, A., i, 380.

5:5-Diphenyl- α -piperonylfulgenic acid (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), 1911, A., i, 380.

5:5-Diphenyl- α -piperonylfulgide (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), 1911, A., i, 380.

$\beta\beta$ -Diphenylpivalic acid, β -hydroxy-, ethyl ester (BLAISE and COURTOT), 1906, A., i, 795.

$\alpha\alpha$ -Diphenylpropaldehyde and its oxime and its nitrile, and semicarbazone (TIEFFENAU and DORLENCOURT), 1907, A., i, 180.

Diphenylpropane, *o*-amino-, and its derivatives (v. BRAUN and DEUTSCH), 1912, A., i, 688.

$\alpha\alpha$ -Diphenylpropane, *di-p*-hydroxy- and its dibenzoyl derivative and dimethyl ether (LUNIAK), 1908, A., i, 416.

$\alpha\beta$ -Diphenylpropane, 1- $\alpha\beta$ -hydroxy- (MCKENZIE and WREN), 1910, T., 477.

$\alpha\gamma$ -Diphenylpropane, β -imino- α -cyano-, formation of (ATKINSON and THORPE), T., 1930; P., 281.

$\beta\beta$ -Diphenylpropane, *pp'*-*di*hydroxy-, action of bromine on (ZINCKE and GRÜTERS), 1906, A., i, 172.

Diphenylpropanes, $\alpha\alpha$ -, $\alpha\beta$ -, and $\alpha\gamma$ -, and their nitration (KONOWALOFF and DOBROWOLSKY), 1905, A., i, 763, 764.

$\alpha\alpha$ -Diphenylpropane- $\alpha\beta\gamma$ -triol. See *r-aa*-Diphenylglycerol.

1:3-Diphenyl-5 isopropenyl-2-thiobarbituric acid (WHITELEY and MOUNTAIN), 1909, P., 121.

Diphenylpropionylbenzamide (RUHEMANN), 1909, T., 987.

Diphenylpropionamide (v. MEYER and NICOLAUS), 1911, A., i, 121.

Diphenylpropionanilide (KÖHLER), 1904, A., i, 596.

$\alpha\alpha$ -Diphenylpropionic acid, synthesis of (EYKMAN), 1908, A., i, 795.

$\alpha\beta$ -Diphenylpropionic acid, *d*-menthyl ester (RUPE and KERKOVIVUS), 1912, A., i, 458.

$\alpha\beta$ -Diphenylpropionic acid, β -amino-, and its hydrochloride (POSNER and STIRNUS), 1912, A., i, 457.

$\beta\beta$ -Diphenylpropionic acid and its methyl ester and α -bromo-derivative (KÖHLER and HERITAGE), 1905, A., i, 207; (KÖHLER), 1905, A., i, 700.

synthesis of, and its amide and anilide (EYKMAN), 1908, A., i, 795.

$\beta\beta$ -Diphenylpropionic acid, β -amino- (POSNER and STIRNUS), 1912, A., i, 457.

α -bromo- α -cyano-, ethyl ester, and α -cyano-, and its ethyl ester, amide and nitrile (KÖHLER and REIMER), 1905, A., i, 347.

β -hydroxy-, and its ethyl ester (RUPE and BUSOLT), 1908, A., i, 23.

$\alpha\beta$ - and $\beta\beta$ -Diphenylpropionic acids, menthyl esters (RUPE and BUSOLT), 1909, A., i, 928.

$\beta\beta$ -Diphenylpropionylmesitylene and bromo- (KÖHLER), 1907, A., i, 1054.

$\beta\beta$ -Diphenylpropionophenone and its phenylhydrazone and oxime and bromo- (KÖHLER), 1904, A., i, 596.

and α -bromo- (KÖHLER and HERITAGE), 1905, A., i, 207; (KÖHLER and JOHNSTIN), 1905, A., i, 215.

Diphenylpropylamine, *hexanitro*- (MULDER), 1906, A., i, 493.

- Di- α -phenylpropylamine** and its derivatives (BUSCH and LEEFHELM), 1908, A., i, 152, 153.
- $\alpha\gamma$ -Diphenylpropylamine** and its salts (HENRICH), 1907, A., i, 324.
- Diphenylpropylcarbinol** and its chloride (KLAGES and HEILMANN), 1904, A., i, 487.
- Di- γ -phenylpropyldicamphor**, isomeric (RUPE and FRISELL), 1905, A., i, 221.
- $\alpha\alpha$ -Diphenylpropylene** and β -bromo- (HELL and BAUER), 1904, A., i, 241.
- $\alpha\alpha$ -Diphenylpropylene**, α -amino-, and its salts (STOERMER and FINCKE), 1909, A., i, 842.
- $\alpha\alpha$ -Diphenyl- $\Delta\beta$ -propylene** (SABATIER and MURAT), 1912, A., i, 757.
- $\alpha\beta$ -Diphenylpropylene** (TIFFENEAU), 1907, A., i, 406.
- $\alpha\gamma$ -Diphenylpropylene** and its dibromide (DIECKMANN and KÄMMERER), 1906, A., i, 820.
- $\alpha\gamma$ -Diphenylpropylene**, β -chloro- (WIELAND), 1904, A., i, 432.
- Diphenylpropylenecamphor**, isomeric, and their bromine derivatives (RUPE and FRISELL), 1905, A., i, 221.
- $\alpha\alpha$ -Diphenylpropylene $\alpha\beta$ -glycol** and its diacetate (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 583; (TIFFENEAU and DORLENCOURT), 1906, A., i, 724.
- $\beta\beta$ -Diphenylpropylene oxide**, and $\alpha\beta$ -glycol, phenyl ether and chlorohydrin of (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 583.
- 4:5-Diphenyl-2-propylglyoxaline** and its hydrochloride, oxalate, and methyl ether (RADZISZEWSKI and WYSOCZAŃSKI), 1909, A., i, 422.
- 4:5-Diphenyl-2-isopropylglyoxaline** and its hydrochloride, platinumchloride, and methyl ether (RADZISZEWSKI and BEISER), 1909, A., i, 422.
- 2:6-Di- ω -phenylpropylcyclohexanone** (BORSCHKE), 1912, A., i, 195.
- Diphenylisopropylidenecyclopentenone** (JAPP and KNOX), 1905, T., 673.
- N*-Diphenylpropylmaleinimide**, γ -bromo- (BARTHOLDY), 1907, A., i, 1044.
- Diphenylisopropylphosphine oxide** (ARBUSOFF), 1910, A., i, 803.
- Diphenylpropylphosphine sulphide** (ARBUSOFF), 1911, A., i, 100.
- 1:5-Diphenyl-3-isopropylpyrazoline** (AUWERS and VOSS), 1910, A., i, 71.
- 1:3-Diphenyl-5-isopropyl-2-thiobarbituric acid** (WHITELEY and MOUNTAIN), 1909, P., 121.
- Diphenylpyrazine** (HARRIES and GOLLNITZ), 1904, A., i, 427.
- 2:5-Diphenylpyrazine** and its 3:4-dihydro-derivative (JAPP and KNOX), 1905, T., 702; P., 153.
- salts of (TUTIN and CATON), 1910, T., 2530; P., 245.
- 2:5-Diphenylpyrazine**, *oo'*-dihydroxy- (TUTIN), 1910, T., 2518; P., 245.
- oo'**pp'*-tetrahydroxy-, and its sulphates (TUTIN), 1910, T., 2514; P., 245.
- 2:6-Diphenylpyrazine**, salts of (TUTIN), 1910, T., 2501; (TUTIN and CATON), 1910, T., 2531; P., 245.
- 2:6-Diphenylpyrazine**, *pp'*-dihydroxy-, and its salts (TUTIN), 1910, T., 2523; P., 244.
- Diphenyl-2:3-pyrazino-1-aminoanthraquinone** (SCHÖLL, EBERLE, and TRITSCH), 1912, A., i, 143.
- Diphenylpyrazinophenazine** (HINSBERG and SCHWANTES), 1904, A., i, 198.
- 1:3-Diphenylpyrazole**, 5-chloro-, and its 1-*m*-nitro-derivative (MICHAELIS and WILLERT), 1908, A., i, 215.
- 1:5-Diphenylpyrazole**, 3-chloro-, and its derivatives (MICHAELIS and WILLERT), 1908, A., i, 213.
- 3:4-Diphenylpyrazole** (WISLICENUS and RUTHING), 1911, A., i, 304.
- 3:5-Diphenylpyrazole** (MOUREU and BRACHIN), 1903, A., i, 581.
- 3:5-Diphenylpyrazole**, *p*-amino- and *p*-nitro- (WIELAND), 1904, A., i, 433.
- 5-Diphenylpyrazolecarboxylic acid**, *o*-toluidide of (DAINS and BROWN), 1909, A., i, 782.
- 1:3-Diphenylpyrazole-2'-carboxylic acid**, 5-chloro- (MICHAELIS and LEO), 1910, A., i, 515.
- 1:5-Diphenyl-3-pyrazolidone**, 4-hydroxy-, and its acetyl and 2-methyl derivatives (JAPP and MAITLAND), 1904, T., 1491; P., 205.
- 1:3-Diphenylpyrazoline** (KÖHLER), 1909, A., i, 939.
- 1:3-Diphenylpyrazoline**, 5-imino-, and its salts (MOUREU and LAZENNEC), 1907, A., i, 159.
- 1:5-Diphenylpyrazoline** and its acetate (AUWERS and MÜLLER), 1909, A., i, 59.
- 1:5-Diphenyl-3-pyrazolone** and its 2-acetyl derivative (JAPP and MAITLAND), 1904, T., 1491; P., 205.
- and its derivatives (MICHAELIS and WILLERT), 1908, A., i, 213.
- 1:3-Diphenyl-5-pyrazolone** and its 1-*m*-nitro-derivative (MICHAELIS and WILLERT), 1908, A., i, 215.

- 1:3-Diphenyl-5-pyrazolone, 3-*s*-di-nitro- (BEREND and HEYMANN), 1904, A., i, 670.
- 1:3-Diphenyl-5-pyrazolone-4-azobenzene-*p*-azoacetoacetic acid, ethyl ester (BÜLOW and BUSSE), 1907, A., i, 166.
- 1:3-Diphenyl-5-pyrazolone-4-azobenzene-*p*-4'-azo-1'-phenyl-3'-methyl-5'-pyrazolone (BÜLOW and BUSSE), 1907, A., i, 166.
- 1:3-Diphenyl-5-pyrazolone-2'-carboxylic acid, and its derivatives and 4-nitro-, and 4-oximino- (MICHAELIS and LEO), 1910, A., i, 515.
- 5:7-Diphenylpyrhydridene, synthesis of, and its salts (STOBBE and VOLAND), 1903, A., i, 115.
- 3:6-Diphenylpyridazine-4-carboxylic acid and its ethyl ester, synthesis of (PAAL and KÜHN), 1908, A., i, 57.
- 2:6-Diphenylpyridine, 4-chloro- and its dichloride (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1909, A., i, 605.
- 2:6-Diphenylpyridine-3-carboxylic acid and its salts (KLOBE), 1903, A., i, 575.
- 4:6-Diphenylpyridine-2:3-dicarboxylic acid (v. MEYER and IRMSCHER), 1908, A., i, 911.
- α -Diphenylpyridinediketone (ERRERA), 1903, A., i, 266.
- 2:6-Diphenyl-4-pyridone and its potassium derivative and hydrochloride and platinichloride (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1909, A., i, 605.
- 2:6-Diphenyl-4-pyridone-3-carboxylic acid (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1911, A., i, 1021.
- 2:6-Diphenyl-4-pyridone-3:5-dicarboxylic acid, tautomerism of the ethyl ester of (PETRENKO-KRITSCHENKO and SCHÖTTLE), 1910, A., i, 188.
- Diphenyl-4-pyridylcarbinol and its salts (TSCHITSCHIBABIN), 1907, A., i, 341.
- 2:6-Diphenyl-4-pyrone and its platinichloride (RUHEMANN), 1908, T., 434; P., 52.
- Diphenylpyrrole, amino- (ANGELICO), 1905, A., i, 938.
- 3-nitroso-, anhydro-trioxime from, and its benzoyl derivative (ANGELICO), 1905, A., i, 660.
- Diphenylpyrrolinophenazine (RUHEMANN), 1910, T., 1443; P., 196.
- Di-4:4'- α -phenylpyrrolazodiphenyl (KHOTINSKY and SOLOWEITSCHIK), 1909, A., i, 616.
- Di-4:4'-*N*-phenylpyrrol-*o*-ditolyl (KHOTINSKY and SOLOWEITSCHIK), 1909, A., i, 616.
- Diphenylquinacridine, tetranitro- (ULLMANN and BROIDO), 1906, A., i, 190.
- Diphenylquinazolone and its hydrochloride (MUMM and HESSE), 1910, A., i, 771.
- 2:4-Diphenylquinoline and its platinichloride (SPALLINO and SALIMEI), 1912, A., i, 723.
- 2:4-Diphenylquinoline, 7-hydroxy- (BÜLOW and ISSLER), 1904, A., i, 191.
- 2:3-Diphenylquinoline-4-carboxylic acid, 6:8-dibromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 1019.
- Diphenyl- γ -quinolylcarbinol and its salts (REMFREY and DECKER), 1908, A., i, 365.
- Diphenylquinomethane. See Fuchson.
- Diphenylquinone. See Diphenylbenzoquinone.
- Diphenylquinoxaline, *p*-chloro- (FISCHER and LIMMER), 1906, A., i, 895.
- 2:3-Diphenylquinoxaline, 5:7-dibromo- (JACKSON and RUSSE), 1906, A., i, 308.
- 5-nitro- (BORSCHKE and RANTSCHKEFF), 1911, A., i, 330.
- Diphenylquinoylmethane, *p*-amino-, *N*-benzoyl derivative of (THOMAE), 1905, A., i, 587.
- Diphenylretene (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- 3:3'-Diphenylrubazonic acid (WAHL and DOLL), 1912, A., i, 626.
- Diphenylsalicylthetine, *di-p*-hydroxy-, and its platinichloride (SMILES and BAIN), 1907, T., 1121; P., 161.
- Diphenylsebacadamide, *di-o*-amino- (MEYER and MATER), 1906, A., i, 766.
- Diphenylselenide-di-*o*-carboxylic acid (LESSER and WEISS), 1912, A., i, 643.
- Diphenylselenodiazole (STOLLE and GUTMANN), 1904, A., i, 698.
- 3:5-Diphenyl-1:2:4-selenodiazole and its platinichloride (BECKER and MEYER), 1904, A., i, 698.
- Diphenylsemicarbazide (MICHAELIS), 1908, A., i, 471.
- 1:4-Diphenylsemicarbazide, and its formyl derivative (BUSCH and BLUME), 1903, A., i, 535.
- 2:4-Diphenylsemicarbazide (BUSCH and WALTER), 1903, A., i, 523.
- Diphenylsemicarbazides, 1:4- and 2:4- (BUSCH and FREY), 1903, A., i, 537.
- $\alpha\delta$ -Diphenylsemicarbazido- α -acetic acid and its ethyl ester (BUSCH, SCHNEIDER, and WALTER), 1904, A., i, 97.

- $\alpha\delta$ -Diphenylsemithiocarbazido- α -acetic acid and its ethyl ester (BUSCH, SCHNEIDER, and WALTER), 1904, A., i, 98.
- Diphenylsilicane, dichloro-, preparation of (KIPPING), 1912, T., 2113; P., 243.
- Diphenylsilicanediol, preparation and properties of (KIPPING), 1912, T., 2122; P., 243.
- Diphenylsilicol (DILTHEY and EDUARD-OFF), 1904, A., i, 464.
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- Diphenyl-silicols and -silicones (MARTIN), 1912, P., 326.
- Diphenylsilicone (DILTHEY and EDUARD-OFF), 1906, A., i, 128.
- 1:1-Diphenyl-*d*-sorbitol, preparation of (PAAL and HÜRNSTEIN), 1906, A., i, 802.
- Diphenylstibine oxide and sulphide and chloro- (MICHAELIS and GÜNTHER), 1911, A., i, 1056.
- Diphenylstibinic acid, *di-m*-nitro- (MORGAN and MICKLETHWAIT), 1911, T., 2294; P., 274.
- $\beta\beta$ -Diphenyl- α -styrylacrylonitrile and its dibromide (STAUDINGER and BUCHWITZ), 1910, A., i, 46.
- Diphenylstyrylcarbinol (KÖHLER), 1903, A., i, 483.
- Diphenylstyrylchloromethane (KÖHLER), 1903, A., i, 483.
- $\delta\delta$ -Diphenyl- α -styrylfulgenic acid (STOBBE, BENARY, and SEYDEL), 1911, A., i, 380.
- $\delta\delta$ -Diphenyl- α -styrylfulgide and its dibromide (STOBBE, BENARY, and SEYDEL), 1911, A., i, 380.
- 1:5-Diphenyl-4- α -styryl-1:2:3-triazole and its bromides (DIMROTH, FRISONI, and MARSHALL), 1907, A., i, 98.
- Diphenylsuccinamide, *di-o*-amino- (MEYER and JAEGER), 1906, A., i, 766.
- 9:12-Diphenylsuccindadiene (BRAND), 1912, A., i, 960.
- (α)- $\alpha\beta$ -Diphenylsuccinic acid, methyl ester of (KOMNENOS), 1910, A., i, 672.
- β -Diphenylsuccinonitrile, behaviour of, at high temperatures, and in presence of spongy platinum (KNOEVENAGEL and BERGDOLT), 1903, A., i, 831.
- Diphenylsulphamide, 4:4'-dibromo-, 2:4:4'-tribromo-, and 2:4:2':4'-tetra-nitro- (WOHL and KOCH), 1911, A., i, 37.
- Diphenylsulphide-2:2'-disulphonic acid. See 2:2'-Disulphodiphenyl sulphide.
- Diphenylsulphinylmethane. See Diphenylsulphoxidemethane.
- Diphenylsulphon-. See Dibenzene-sulphon-.
- Diphenylsulphone, action of bromine on (BÖESEKEN), 1911, A., i, 41.
- Diphenylsulphone, 4:4'-diamino-, and its diacetyl derivative, and 4:4'-dinitro- (FROMM and WITTMANN), 1908, A., i, 632.
- 4:4'-dichloro-, and its nitro-derivatives, 3:3'-dinitro-*di*- and -*tetra*-amino-, and 3:3'-*di*- and 3:5:3':5'-*tetra*-nitro-4:4'-*di*hydroxy- (ULLMANN and KORSSELT), 1907, A., i, 306.
- oo*-*di*hydroxy-, and its diacetyl derivative (MAUTHNER), 1906, A., i, 422.
- p*-iodo-, *p*-iodoso-, and *p*-iodoxy-, and their derivatives (WILLGERODT and KLINGER), 1912, A., i, 256.
- Diphenylsulphones, *di-o*- and *p*-hydroxy- (HINSBERG), 1903, A., i, 252.
- Diphenylsulphone-*o*-carboxylic acid (ULLMANN and LEHNER), 1904, A., i, 417.
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and 5-amino-, *N*-acetyl derivative of, and 4'-chloro- (ULLMANN and LEHNER), 1905, A., i, 290.
- Diphenylsulphone-4'-carboxylic acid, 4-iodo-, and its derivatives, and 4-iodoso-, ethyl ester (WILLGERODT and PLOCKSTIES), 1912, A., i, 257.
- Diphenylsulphonium dibromide (BOURGEOIS), 1912, A., i, 109.
- Diphenylsulphonylethane, *di-o*-amino-, and *di-o*-nitro- (CLAASZ), 1912, A., i, 514.
- Diphenylsulphoxide-*o*-carboxylic acid. See *o*-Carboxydiphenyl sulphoxide.
- Diphenylsulphoxidemethane (*diphenylsulphinylmethane*) and its benzenediazonium derivative (HINSBERG), 1912, A., i, 546.
- Diphenyltellurium di-iodide (LEDERER), 1910, A., i, 732.
- Diphenyl-2:3:2':3'-tetracarboxylic acid and its tetramethyl ester (KENNER), 1912, P., 277.
- Diphenyl-2:3:5:6'-tetracarboxylic acid (BUCHER), 1908, A., i, 792.
- Diphenyl-2:4:2':4'-tetracarboxylic acid and its tetramethyl ester (LIEBERMANN and KARDOS), 1912, A., i, 465.
- Diphenyl-2:6:2':6'-tetracarboxylic acid and its derivatives (MAYER), 1911, A., i, 869.

- Diphenyl-3:4:3':4'-tetracarboxylic acid, methyl ester (LIEBERMANN and KARDOS), 1912, A., i, 466.
- Diphenyl-3:4:3':4'-tetracarboxylic acid, 6-nitro-, and its silver salt and ethyl ester (CROSSLEY and HAMPSHIRE), 1909, P., 162; 1911, T., 724.
- Diphenyl-4:4':2:3'-tetracarboxylic acid and its methyl ester (LIEBERMANN and KARDOS), 1912, A., i, 465.
- α X-Diphenyltetradeceane (v. BRAUN and DEUTSCH), 1912, A., i, 688.
- 2:2-Diphenyltetrahydrofuran-5-carboxylic acid, 3:4:5-trihydroxy- (PAAL and KINSCHER), 1912, A., i, 31.
- 4:5-Diphenyltetrahydroglyoxaline, 3-bromo-2-hydroxy- (BILTZ), 1912, A., i, 908.
- 4:5-Diphenyltetrahydro-2-glyoxalone, bromo-derivatives (BILTZ and RIMPEL), 1908, A., i, 574.
- 5:5-Diphenyltetrahydro-4-glyoxalone and its salts and 2-hydroxy-, and its acetyl derivative (BILTZ and SEYDEL), 1912, A., i, 909.
- Diphenyltetrahydropyrimidone, and its carboxylic acid, ethyl ester (RUHEMANN), 1903, T., 374; P., 50.
- Diphenyltetrahydropyrimidone, *m*-nitro-, and its carboxylic acid, ethyl ester (RUHEMANN), 1903, T., 719; P., 128.
- 2:6-Diphenyltetrahydropyrene, 3:3:5:5-tetrabromo-, and an isomeride of (SCHTVAN), 1909, A., i, 505.
- 2:6-Diphenyltetrahydropyrene-3:5-dicarboxylic acid, ethyl ester, and its potassium salt (PETRENKO-KRITSCHENKO and DEMENTYEFF), 1908, A., i, 560.
- 2:6-Diphenyltetrahydropyrene-3:5-dicarboxylic acid, 3:5-dibromo-, ethyl ester (SCHTVAN), 1909, A., i, 504.
- α c-Diphenyl- $\beta\beta\beta\delta$ -tetramethylpentan- γ -one (HALLER), 1912, A., i, 270.
- 3:6-Diphenyl-1:2:4:5-tetrazine, *di*-amino-, and its salts and diacetyl derivative (JUNGHAHN and BUNIMOWICZ), 1903, A., i, 131.
- di*-*p*-bromo- (STOLLÉ and WEINDEL), 1906, A., i, 708.
- 4:5-Diphenyl-1-tetrazodiphenylglyoxaline, 2-thiol- (BURIÁN), 1904, A., i, 354.
- 1:5-Diphenyl-1:2:3:4-tetrazole (SCHROETER), 1909, A., i, 617; (SCHROETER and MOTSCHMANN), 1909, A., i, 774.
- and its bromo-derivatives, synthesis of (DIMROTH and MERZBACHER), 1907, A., i, 659.
- Diphenyltetrazoliumcarboxylic acid, ethyl ester, ethosulphate of (HELLER), 1907, A., i, 261.
- Diphenylthallium bromide (MEYER and BERTHEIM), 1904, A., i, 657.
- 2:5-Diphenylthiazole (GABRIEL), 1910, A., i, 190.
- 3:4-Diphenyl-2:3-thiazoline, 2-thio- (v. WALTHER and GREIFENHAGEN), 1907, A., i, 350.
- Diphenylthienylcarbinol (THOMAS), 1908, A., i, 360.
- 1:3-Diphenyl-2-thioalloxan-phenyl- and *p*-nitrophenyl-hydrazones (WHITELEY and MOUNTAIN), 1909, P., 122.
- 1:3-Diphenylthiobarbituric acid (ISHERWOOD), 1909, P., 121; (WHITELEY and MOUNTAIN), 1909, P., 121.
- 1:3-Diphenyl-2-thiobarbituric acid, 5-*mono*- and *di*-bromo-, preparation of, and the estimation of bromine in (WHITELEY), 1908, P., 288.
- Diphenylthiobenzamide (RUSSELL), 1910, T., 956.
- s*-Diphenylthiocarbamide (*thiocarbanilide*), action of acyl chlorides on (DIXON and HAWTHORNE), 1907, T., 137.
- action of formaldehyde on (OFFERMANN), 1905, A., i, 770.
- s*-Diphenylthiocarbamide, *p*-*di*hydroxy- (CHEMISCHE FABRIK LADENBURG), 1911, A., i, 438.
- as*-Diphenylthiocarbamide, bromo-, chloro-, and nitro-derivatives, melting points of (KJELLIN), 1903, A., i, 287.
- 2:5-Diphenyl-1:3:4-thiodiazole, *di*-*o*-, *m*-, and *p*-bromo- (STOLLÉ and JOHANNISSIEN), 1904, A., i, 695.
- di*-*m*-chloro- (STOLLÉ and FOERSTER), 1904, A., i, 627.
- 3:5-Diphenyl-1:2:4-thiodiazole and its additive salts (v. WALTHER), 1904, A., i, 348.
- Diphenylthioformamide and its methiodide (WILLSTÄTTER and WIRTH), 1909, A., i, 460.
- 5:5-Diphenylthiohydantoin (BILTZ, KREBS, and SEYDEL), 1909, A., i, 526.
- Diphenylisothiohydantoin (DIXON and TAYLOR), 1912, T., 560; P., 54.
- 1:5-Diphenylthiolanthraquinone (GATTERMANN), 1912, A., i, 1002.
- Diphenylthiolbenzoquinones, 2:6-, and 3:6-, and their diacetyl derivatives (POSNER), 1904, A., i, 1029.
- α X-Diphenylthioldecane (v. BRAUN and TRÜMPER), 1910, A., i, 26.
- Diphenylthiodibenzylacetone (RUHEMANN), 1905, T., 23.

- 5:8-Diphenylthiol-1:2-, -1:3-, and -1:4-dimethylantraquinones (HARROP, NORRIS, and WEIZMANN), 1909, T., 1316.
- $\alpha\delta$ -Diphenylthiooctane (V. BRAUN and TRÜMLER), 1910, A., i, 26.
- Diphenylthiolquinols, 2:6- and 3:6-, and their diacetyl derivatives (POSNER), 1904, A., i, 1029.
- Diphenylthiol-toluquinol and its diacetate, -toluquinone, and -tetrahydro-toluquinone (POSNER and LIPSKI), 1904, A., i, 1031.
- 3:4-Diphenylthiophen-2:5-dicarboxylic acid (HINSBERG), 1910, A., i, 335.
- Diphenylthiophosphinic acid, ethyl ester (ARBUSOFF), 1911, A., i, 100.
- Diphenylthiophosphinous acid, esters of (ARBUSOFF), 1911, A., i, 100.
- $\beta\delta$ -Diphenylthiosemicarbazide hydrochloride (BUSCH), 1910, A., i, 75.
- $\alpha\delta$ -Diphenylthiosemicarbazide- α -carb-oxylic acid, ethyl ester (BUSCH and LIMPACH), 1911, A., i, 690.
- Diphenylthiosemicarbazinoacetic acid, inner anhydride of (BUSCH and MEUSS-DÖRFFER), 1907, A., i, 448.
- 1:4-Diphenyl-5-thiourazole, and its sodium, silver and *O*-methyl derivatives (BUSCH, REINHARDT, and LIMPACH), 1910, A., i, 142.
- 1:3-Diphenylthiovioluric acid (ISHERWOOD), 1909, P., 121.
- 1:3-Diphenyl-2-thiovioluric acids, α - and β -, and the piperidine, pyridine, and metallic salts of the β -acid (WHITELEY and MOUNTAIN, 1909, P., 122).
- 3:5-Diphenyltoluene-2:2':2''-tricarboxylic acid and its calcium salt and esters (ERRERA), 1908, A., i, 184.
- Diphenyl-*p*-tolylacetic acid, methyl ester (BISTRZYCKI and V. SIEMIRADZKI), 1906, A., i, 136.
- salts, preparation of (GYR), 1909, A., ii, 34.
- Diphenyl-*p*-tolylacetyl chloride (BISTRZYCKI and LANDTWING), 1908, A., i, 270.
- Diphenyl-*m*-tolylcarbinol, boiling and melting points of (ACREE), 1905, A., i, 217.
- Diphenyl-*p*-tolylcarbinol, preparation of (BISTRZYCKI and GYR), 1904, A., i, 315.
- Diphenyl-*o*- and -*m*-tolylcarbinols (BISTRZYCKI and GYR), 1904, A., i, 497.
- Diphenyl-*o*-, -*m*-, and -*p*-tolylcarbinols (ACREE), 1904, A., i, 409.
- Diphenyltolylchloroamidine (STEINDORFF), 1904, A., i, 452.
- Diphenyl-*p*-tolylchloromethane (BISTRZYCKI and GYR), 1904, A., i, 315.
- and its peroxide (GOMBERG and LYNN), 1904, A., i, 489.
- 2:2-Diphenyl-1-tolylidihydroisobenzofuran, and hydroxy- (GUYOT and VALLETTE), 1911, A., i, 653.
- 4:5-Diphenyl-3-*o*-, -*m*-, and -*p*-tolyl-2:3-dihydro-2-oxazolones (McCOMBIE and PARKES), 1912, T., 1996.
- Diphenyl-1-*p*-tolylidihydrotriazole, *endo*-thio- (BUSCH and BLUME), 1903, A., i, 535.
- 2:4-Diphenyl-1-*p*-tolyl-2:5-dihydro-1:2:3-triazole and the corresponding tetrahydrotriazole (BUSCH and HEFELE), 1911, A., i, 583.
- 1:5-Diphenyl-4-*o*- and -*p*-tolylidihydrotriazoles, *endo*thio- (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 531.
- Diphenyl-*p*-tolylethylene glycol (ACREE), 1904, A., i, 743.
- 4:5-Diphenyl-2-*p*-tolylglyoxaline and its hydrochloride, platinichloride, and methyl ether (RADZISZEWSKI and ROHM), 1909, A., i, 422.
- 4:5-Diphenyl-2-*o*- and -*m*-tolylglyoxalines and their hydrochlorides, platinichloride, and ethers (RADZISZEWSKI and STENZEL), 1909, A., i, 422.
- Diphenyl-*m*-tolylguanidine and its salts (ALWAY and VIELE), 1903, A., i, 201.
- Diphenyl-*p*-tolylhydroxyamidines, 1:2:3- and 2:3:1-, and their hydrochlorides (LEY and HOLZWEISSIG), 1903, A., i, 282.
- $\gamma\gamma$ -Diphenyl- α -*p*-tolylideneitaconic acid and its salts and anhydride (STOBBE, K. and P. KOHLMANN, and NAOUM), 1904, A., i, 672.
- Diphenyl-*m*-tolylmethane (E. and O. FISCHER), 1904, A., i, 864.
- Diphenyl-*o*- and -*m*-tolylmethanes and the chloro-derivatives of the *o*-compound (BISTRZYCKI and GYR), 1904, A., i, 498.
- 4:5-Diphenyl-3-*m*-, and -*p*-tolyloxasulphinazoles (McCOMBIE and PARKES), 1912, T., 1998.
- Diphenyl-*o*-tolylpropionic acid and its methyl ester (KÖHLER and HERITAGE), 1905, A., i, 208.
- 4:6-Diphenyl-2-*p*-tolylpyridine, 3-cyano- (V. MEYER and IRMSCHER), 1908, A., i, 912.
- Diphenyl-*p*-tolyl- ψ -thiocarbamide (ARNDT), 1911, A., i, 920.
- 2:5-Diphenyl-1-*o*-tolyl-1:3:4 triazole and its silver nitrate derivative (STOLLÉ and THOMAE), 1906, A., i, 462.

- Diphenyltolyltriazoles**, synthesis of (v. WALTHER and KRUMBIEGEL), 1903, A., i, 661.
- 5:6-Diphenyl-1:2:4-triazine**, 3-hydroxy- (BILTZ), 1905, A., i, 491.
- 1:4-Diphenyl-1:2:3-triazole**, 5-amino-, and its acetyl and benzylidene derivatives (DIMROTH and WERNER), 1903, A., i, 129.
- 5-chloro-, and 5-hydroxy-, and its benzoyl derivative and methyl ether (DIMROTH and LETSCHE), 1905, A., i, 100.
- 1:5-Diphenyl-1:2:3-triazole** and its 4-azacetophenone, 4-azobenzoylacetic acid, ethyl ester, 4-carboxylic acid and its derivatives and 4-amino- and 4-benzoyl compounds (DIMROTH, FRISONI, and MARSHALL), 1907, A., i, 97.
- and its 4-carboxylic acid and its salts and esters (DIMROTH and LETSCHE), 1903, A., i, 127.
- 1:5-Diphenyl-1:2:3-triazole**, 4-cyano- (v. MEYER and SCHUMACHER), 1908, A., i, 912.
- 1:3-Diphenyl-1:2:4-triazole**, 5-disulphide (WHEELER and STATIROPOULOS), 1905, A., i, 722.
- 1:5-Diphenyl-1:2:4-triazole**, 3-amino-, and its acyl derivatives and salts (WHEELER and BEARDSLEY), 1903, A., i, 293.
- and its *N*-alkyl derivatives (JOHNSON and MENGE), 1904, A., i, 948.
- 2:5-Diphenyl-1:2:4-triazole** and its additive derivatives (EINHORN, BISCHKOPFF, and SZELINSKI), 1906, A., i, 246.
- 2:5-Diphenyl-1:3:4-triazole** hydrochloride (FRANZEN and KRAFT), 1911, A., i, 817.
- 2:5-Diphenyl-1:3:4-triazole**, 1-amino-, salts of (FRANZEN and KRAFT), 1911, A., i, 816.
- di-p*-bromo- (STOLLÉ and WEINDEL), 1906, A., i, 708.
- di-m*-chloro- (STOLLÉ and FOERSTER), 1904, A., i, 627.
- 1-hydroxy- (STOLLÉ and THOMAE), 1906, A., i, 462.
- 3:4-Diphenyl-1:2:5-triazole** and its silver derivative (STOLLÉ, MÜNCH, and KIND), 1905, A., i, 97.
- 3:4-Diphenyl-1:2:5-triazole**, 1-amino-, dibenzoyl derivative (STOLLÉ), 1909, A., i, 123.
- 1:4-Diphenyl-1:2:3-triazole-5-azo- β -naphthol** (DIMROTH, MARSHALL, and HESS), 1909, A., i, 268.
- 1:5-Diphenyl-1:2:3-triazole-4-carboxylamide** (v. MEYER and SCHUMACHER), 1908, A., i, 912.
- Diphenyl-3:4-gem-triazoloisooxazole** (3:4-phenylazimino-5-phenylisooxazole) (WIELAND and GMELIN), 1910, A., i, 784.
- Diphenyl triketone** and *p*-nitro-, and its hydrate and diphenylhydrazone (WIELAND and BLOCH), 1904, A., i, 597.
- phenylhydrazones of (DIMROTH and HARTMANN), 1909, A., i, 67.
- 4:5-Diphenyl-1:3:7-trimethylacetylene-diureine** and its acetyl derivative (BILTZ and RIMPEL), 1909, A., i, 849.
- $\alpha\alpha$ -Diphenyl- β -trimethylacetylpropionic acid** (JAPP and MAITLAND), 1904, T., 1499.
- 4:4'-Diphenyltriphenylcarbinol** and its chloride (SCHLENCK and WEICKEL), 1909, A., i, 792.
- 4:4'-Diphenyltriphenylmethane** (SCHLENCK, WEICKEL, and HERZENSTEIN), 1910, A., i, 237.
- 4:4'-Diphenyltriphenylmethyl** (SCHLENCK, WEICKEL, and HERZENSTEIN), 1910, A., i, 236.
- 1:3-Diphenyluramil**. See 1:3-Diphenylbarbituric acid, 5-amino-.
- Diphenylurazine** (ROLLA), 1908, A., i, 474.
- 1:3-Diphenyluric acid**, synthesis of (WHITELEY), 1906, P., 200; 1907, T., 1338.
- 1:3-Diphenyl- ψ -uric acid**, synthesis of (WHITELEY), 1906, P., 200; 1907, T., 1341.
- $\alpha\delta$ -Diphenylvaleric acid** and its amyl ester (RUPE and LIECHTENHAN), 1909, A., i, 929.
- $\alpha\delta$ -Diphenylvaleric acid**, β -iodo- γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 538.
- $\beta\gamma$ -Diphenylvaleric acid**, δ -amino-, hydrochloride of (AVERY and MCDOLE), 1908, A., i, 796.
- $\beta\delta$ -Diphenylvaleric acid**, $\alpha\gamma$ -dihydroxy-, potassium salt and esters (SPÄTH), 1912, A., i, 978.
- $\gamma\gamma$ -Diphenylvaleric acid**, synthesis of (EYKMAN), 1908, A., i, 23.
- $\alpha\beta$ -Diphenylvaleric acids** and their nitriles and their α -alkyl and α -benzoyl derivatives, and α -cyano- (KOHLENER), 1906, A., i, 427.
- $\alpha\delta$ -Diphenylvaleronitrile** (BORSCHKE), 1912, A., i, 264.
- $\alpha\beta$ -Diphenylvalerophenone** (KOHLENER), 1906, A., i, 429.

- $\beta\beta$ -Diphenylvalerophenone** and its oxime (KÖHLER), 1907, A., i, 1054.
- $\delta\delta$ -Diphenyl- α -veratrylfulgenic acid** and its sodium salt and dimethyl ester (STOBBER, KOHLMANN, and REDDELIEN), 1911, A., i, 380.
- $\delta\delta$ -Diphenyl- α -veratrylfulgide** (STOBBER, KOHLMANN, and REDDELIEN), 1911, A., i, 380.
- $\beta\gamma$ -Diphenylvinylacetic acid** and the allo-acid and their salts (FICHTER and LATZKO), 1907, A., i, 86.
- Diphenylvioluric acid.** See 1:3-Diphenylbarbituric acid, 5-isonitroso-.
- 9-Diphenylxanthen**, 4'-amino- (ULLMANN and ENGI), 1904, A., i, 682.
- $\alpha\beta$ -Diphenyl- α -xanthylethane** (GOMBERG and CONE), 1910, A., i, 56.
- Diphenyl-*p*-xylylene** and its bromide (THIELE and BALHORN), 1904, A., i, 491.
- 3:5-Diphenyl-1-*m*-xylyl triazole**, synthesis of (v. WALTHER and KRUMBIEGEL), 1903, A., i, 661.
- 2:5-Diphenyl-1-xylyl-1:3:4-triazole** (STOLLÉ and THOMAE), 1906, A., i, 462.
- m*-Diphenylacetic acid** and its amide (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- 2-(4')-Diphenylamino- α -naphthaquinone** (PUMMERER and BRASS), 1911, A., i, 655.
- m*-Diphenyl isobutyl ketone**, and its oxime and phenylhydrazone (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- γ -*m*-Diphenylbutyric acid**, and its amide (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- 4-Diphenylldiguanide**, 4'-amino- (COHN), 1911, A., i, 929.
- m*-Diphenylylethyl ketone** and its oxime and phenylhydrazone (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- Diphenyl-4-hydroxy-3-carboxynaphthylacetic acid** (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 468.
- β -*m*-Diphenylpropionic acid** and its amide (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- m*-Diphenyl propyl** and *isopropyl* ketone and their oximes and phenylhydrazones (WILLGERODT and SCHOLTZ), 1910, A., i, 393.
- Diphorone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.
- Diphosphatide**, amino-, in egg-yolk (MACLEAN), 1909, A., ii, 499.
- tri-amino-**, unsaturated, from the kidney, and its cadmium chloride derivative (FRÄNKEL and NOGUEIRA), 1909, A., i, 276.
- $\alpha\delta$ -Diphthaliminoadipic acid** (DAVIES, STEPHEN, and WEIZMANN), 1912, P., 95.
- 8-Diphthaliminoacetone oxime** (POSNER and ROHDE), 1909, A., i, 765.
- $\alpha\delta$ -Diphthaliminoadipic acid**, ethyl ester (DAVIES, STEPHEN, and WEIZMANN), 1912, P., 95.
- Diphthaliminoethylenemalonic acid**, ethyl ester, and the corresponding phthalamic acid, synthesis of (SÖRENSEN and ANDERSEN), 1908, A., i, 650.
- 4:6-Diphthaliminoisophthalic acid**, ethyl ester (BOGERT and KROPPF), 1909, A., i, 584.
- Diphthaliminotrimethylenemalonic acid**, ethyl ester (SÖRENSEN and ANDERSEN), 1908, A., i, 651.
- Diphthaloperinyl ether** (SACHS), 1909, A., i, 429.
- Diphthaloylic acid** (GRAEBE), 1905, A., i, 704.
- Diphthaloylic acid**, 3:6-*di*- and *tetra*-chloro- (GRAEBE and PETER), 1905, A., i, 705.
- 2:3:6:7-Diphthaloyl-9-methylcarbazole** (EHRENREICH), 1912, A., i, 130.
- Diphthalyl-diaminodiphenyl-ethane** and *-methane* (KAUFLEER and BOREL), 1907, A., i, 795.
- Diphthalylbenzene** (PHILIPPI), 1911, A., i, 794.
- 2:3:6:7-Diphthalylcarbazole** (SCHOLL and NEOVIUS), 1911, A., i, 567.
- Diphthalyl-dianisidine** (KAUFLEER and BOREL), 1907, A., i, 795.
- Diphthalylethane.** See Bisdiketohydrindene.
- Diphthalylglycylacetoacetic acid**, ethyl ester (SCHEIBER), 1909, A., i, 390.
- 2:3:6:7-Diphthalyl-*N*-methylthiodiphenylamine** (SCHOLL, SEER, and TRITSCH), 1911, A., i, 559.
- Diphthalyl-2:7-naphthylenediamine** (KAUFLEER and KARRER), 1907, A., i, 795.
- Diphthalylthianthren** (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 1013.
- 2:3:6:7-Diphthalylthianthren** (SCHOLL and SEER), 1911, A., i, 558.
- 2:3:6:7-Diphthalylthiodiphenylamine-thiodianthraquinonylamine** and its sulphonic acid (SCHOLL and SEER), 1911, A., i, 558.

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Dipicolinic acid. See *Pyridine-2:6-dicarboxylic acid*.

Dipicolinic diazoimide, dihydrazide, diphenylhydrazide, and diurethane (MEYER and MALLY), 1912, A., i, 515.

Dipicryl-1:5-diaminoanthraquinone (SEER and WEITZENBÖCK), 1910, A., i, 571.

oo'-Dipicryldiaminodiphenyl disulphide (KEHRMANN and STEINBERG), 1911, A., i, 1034.

Dipicrylarginine (HIRAYAMA), 1909, A., i, 341.

Dipicryldianthranilide (SCHROETER and EISLER), 1909, A., i, 576.

Dipicrylhistidine (HIRAYAMA), 1909, A., i, 341.

Dipicrylpiperazine (VAN DORP), 1909, A., i, 328.

Dipiperacylacetic acid (BOUGAULT), 1909, A., i, 487.

Dipiperidinium bromide. See *Pentamethylenepiperidinium bromide*.

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1:5-Dipiperidylantraquinone and 4:8-diamino (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 499.

Dipiperidyl- ω -benzylacetophenone (WATSON), 1904, T., 1322; P., 181.

s-Dipiperidyl dimethylcarbamide (EINHORN), 1908, A., i, 611.

Dipiperidyl dimethylethylcarbinol (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 936.

Dipiperidyl diphenylmethane and its derivatives (v. BRAUN and KRUBER), 1912, A., i, 970.

Dipiperidyl propyl ether and its additive salts (GABRIEL and COLMAN), 1906, A., i, 881.

α -(Di-1-piperidyl)hexane, and its derivatives (v. BRAUN), 1910, A., i, 821.

Dipiperidylmethane, imino- (*dipiperidinoguanidine*), and its picrate and platinocyanide (v. BRAUN), 1909, A., i, 507.

Dipiperidyl-4-nitrophenyl-2-carbamide (SPIEGEL and UTERMANN), 1906, A., i, 883.

Dipiperidyl oxalic dimethyl ether (LANDER), 1904, T., 987; P., 131.

Dipiperidyl thiocarbamide (FROMM), 1909, A., i, 506.

Dipiperidyl thiouram sulphide (v. BRAUN and STECHELE), 1903, A., i, 618.

Dipiperine, compounds of, with tin tetrabromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 792.

Dipiperonal, compounds of, with tin tetrabromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.

$\alpha\delta$ -Dipiperonylbutane- $\beta\gamma$ -dicarboxylic acid (STOBBE, VIEWEG, ECKERT, and REDDELIEN), 1911, A., i, 378.

$\alpha\delta$ -Dipiperonylfulgenic acid and its potassium salt and ethyl ester (STOBBE, VIEWEG, ECKERT, and REDDELIEN), 1911, A., i, 378.

$\alpha\delta$ -Dipiperonylfulgide (STOBBE, VIEWEG, ECKERT, and REDDELIEN), 1911, A., i, 378.

Dipiperonylhydracryl ketone, di-o-nitro (HERZ), 1905, A., i, 779.

s-Dipiperonylhydrazine and its derivatives (CURTIUS and SCHMITTMANN), 1912, A., i, 510.

Dipiperonylideneacetone. See *Dimethylenedioxystyryl ketone*.

2:6-Dipiperonylidene-3-methylcyclohexanone (STRIEGLER), 1912, A., i, 784.

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Dipiperonylidene cyclopentanone (MENTZEL), 1903, A., i, 497.

Dipiperonylidene picolide (SCHOLTZ), 1912, A., i, 386.

Dipiperonylidene-2:4:6-trimethylpyridine and its mercurichloride (BRAMSCH), 1909, A., i, 415.

Dipiperylhydrazine and its picrate (ANGELI and CASTELLANA), 1905, A., i, 491.

- Dipivaloyl** and its monoxime (BOUE-AULT and LOCQUIN), 1906, A., i, 784.
- Diplococcus rheumaticus* (BEATTIE), 1904, A., ii, 363.
- Diploicin** (ZOPF), 1904, A., i, 1020.
- Diploschistessic acid** (ZOPF), 1906, A., i, 672.
- Diprimary compounds** containing an odd number of carbon atoms, new method of synthesis of (HAMONET), 1907, A., i, 581.
- Dipropaldehyde** tetraethylacetal, β -imino- (WOHL, HERTZBERG, and LOSANITSCH), 1906, A., i, 106.
- Dipropargyl** and its magnesium derivative (LESPIEAU and VAVON), 1909, A., i, 450.
- Diisopropenyl**. See $\beta\gamma$ -Dimethyl- $\Delta\alpha\gamma$ -butadiene.
- 1:2-Diisopropenylcyclobutane** (LEBEDOFF), 1911, A., i, 774.
- 2:5-Dipropenylpyrazine**, γ -hexachloro- (FRANKE), 1906, A., i, 47.
- $\alpha\alpha'$ -Dipropionin** (ALPERN and WEIZMANN), 1910, P., 345; 1911, T., 85.
- Dipropionyl**. See Diethyl diketone.
- Dipropionylacetic acid**, ethyl ester and its copper salt (LUNIAK), 1910, A., i, 90.
- 1:3-Dipropionylindole** (ODDO and SESSA), 1911, A., i, 487.
- Dipropionylmethane** (FISCHER and BARTHOLOMÄUS), 1912, A., i, 646.
- Di-*p*-propionylphenylcarbamide** (KUNCKELL), 1911, A., i, 990.
- $\alpha\delta$ -Dipropoxy- $\Delta\beta$ -butinene** (GAUTHIER), 1909, A., i, 355.
- $\alpha\alpha'$ -Dipropoxyethane**, $\beta\beta$ -dichloro- (ODDO and MAMELI), 1904, A., i, 281.
- 2:4-Di-*n*-propoxyquinazoline** (BOGERT and MAY), 1909, A., i, 330.
- Dipropylacetonitrile**. See Heptane- δ -carboxylonitrile.
- Dipropylacetylcarbamide** (FISCHER and DILTHEY), 1905, A., i, 37.
- Dipropylacetyl-*p*-phenetidine** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 418.
- Dipropylamine**, action of, on the isomeric nitrohalogenbenzenes (PERNA), 1903, A., i, 406.
- salts (DEHN), 1912, A., i, 241, 242.
- Dipropylamine**, α -cyano- (HENRY), 1904, A., i, 854.
- Di-isopropylamine** aurichloride (LÖFFLER), 1910, A., i, 611.
- Dipropylaminoacetonitrile** and its methiodide (v. BRAUN), 1907, A., i, 900.
- Dipropylaminoazobenzene-*p*-sulphonic acid** and its barium salt (GOLDSCHMIDT and KELLER), 1903, A., i, 135.
- α -Dipropylamino- α -phenyl- Δ^a -buten- γ -one** (ANDRÉ), 1911, A., i, 269.
- Dipropylaminosuccinic acid** and its salts and dinitroso- (FRANKLAND and SMITH), 1912, T., 58.
- Dipropylaminosuccinic acid**, tetrabromo- (FRANKLAND and SMITH), 1912, T., 1727.
- Dipropylammonium cyanide** (MICHAEL and HIBBERT), 1909, A., i, 91.
- nitrite (RAY and RAKSHIT), 1912, T., 613; P., 41.
- iridichloride (GUTBIER and LINDNER), 1909, A., ii, 1026.
- osmichloride (GUTBIER and MAISCH), 1911, A., i, 19.
- telluride and -chloride (GUTBIER, FLURY, and MICHELER), 1911, A., i, 182.
- tungstate (EKELEY), 1909, A., i, 556.
- Dipropylisoamylcarbinol** (AMOUROUX and MURAT), 1912, A., i, 415, 527.
- Dipropylaniline**, *o*-nitro-, and its salts (WEISSENBERGER), 1912, A., i, 691.
- 5:5-Dipropylbarbituric acid** (FARBEN-FABRIKEN VORM. F. BAYER & CO.), 1906, A., i, 538, 704; (MERCK), 1911, A., i, 683.
- and 4-imino- (CONRAD), 1905, A., i, 752.
- as a narcotic (FISCHER and v. MERING), 1903, A., i, 552.
- quinine salt (MERCK), 1912, A., i, 1013.
- o*-Dipropylbenzene**, di- α -hydroxy- (NELKEN and SIMONIS), 1908, A., i, 348.
- Diisopropylbenzene**, tetrahydroxy-, tetra-acetate (FICHTER and WILLMANN), 1904, A., i, 679.
- 2:5-Diisopropyl-*p*-benzoquinone**, hydrolysis of (FICHTER and GLASER), 1908, A., i, 660.
- 2:5-Diisopropyl-*p*-benzoquinone**, 3:6-di-hydroxy-, and its diacetate (FICHTER and WILLMANN), 1904, A., i, 678.
- dibenzoate of (FICHTER and WEISS), 1908, A., i, 659.
- Di-*p*-isopropylbenzylidenepicolide** (SCHOLTZ), 1912, A., i, 386.
- 1:2-Diisopropylcyclobutane** (LEBEDEFF), 1911, A., i, 774.
- Dipropylbutanetetra-carboxylic acid**, ethyl ester (WOLFF), 1911, A., i, 690.
- Dipropylisobutylcarbinol** (AMOUROUX and MURAT), 1912, A., i, 415, 528.
- 3:5-Diisopropyl-2-isobutylpyridine**. See Valeritrine.

- Dipropylcarbamic acid**, methyl and ethyl esters (McKEE), 1909, A., i, 636.
- o*- and *p*-tolyl and guaiacyl esters (BOUCHETAL DE LA ROCHE), 1904, A., i, 152.
- Dipropylconiinium iodides**, isomeric (SCHOLTZ), 1905, A., i, 297.
- Dipropylcyanoacetic acid**. See *α*-Propylvaleric acid, *α*-cyano-.
- 2:2'-Di-*n*-propyl-1:1'-dianthraquinonyl** (SCHOLL, POTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- 2:2'-Diisopropyl-1:1'-dianthraquinonyl** (SCHOLL, POTSCHWAUSCHEG, BÖCKER, and LENKO), 1911, A., i, 1009.
- 9:10-Dipropyldihydrophenanthrene**, 9:10-*dihydroxy*-, and its oxide (ZINCKE and TROPP), 1908, A., i, 787.
- 3:6-Diisopropyl-*s*-dihydropyrimidine** (STOLLÉ and GUTMANN), 1904, A., i, 697.
- 4:4'-Diisopropyldiphenyl** (SCHREINER), 1910, A., i, 367.
- 4:5-Diisopropyldiphenyliminazolone** (BILTZ and STELLBAUM), 1905, A., i, 674.
- 5:6-Diisopropyldiphenyltriazine**, 3-*hydroxy*-, and its acetyl derivative (BILTZ and STELLBAUM), 1905, A., i, 675.
- Di-*d*-propylenediamine**, platinum chloride and nitrate (TSCHUGAEFF and SOKOLOFF), 1909, A., i, 138.
- Dicyclopropylethanol** and its bromide (MICHIELS), 1912, A., i, 259.
- Dipropylethylenedibarbitoric acid** (WOLFF), 1911, A., i, 690.
- Diisopropylformal**, *s-tetrachloro*- (WOHL and ROTH), 1908, A., i, 942.
- Dipropyl-formamide** and *-hydroxylamine* (v. BRAUN), 1903, A., i, 611.
- Dipropylglycine**, ethyl ester (v. BRAUN), 1907, A., i, 900.
- C-Dipropyl-glycolcyanamide** and *-glycolylcarbamide* and its salts (CLEMMENSEN and HEITMAN), 1908, A., i, 771.
- Dipropylglycollic acid** (CRICHTON), 1906, T., 932; P., 162.
- 5-Dipropylhexahydropyrimidine**, 4:6-*diimino-2-thio*- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.
- Diisopropylidenepropionamide** (PAULY and HÜLTENSCHMIDT), 1904, A., i, 88.
- Dipropyl ketone**, acetate of enolic form of (HÂNCU), 1909, A., i, 364.
- Diisopropyl ketone semicarbazone** (PICKARD and KENYON), 1912, T., 629.
- Diisopropyl ketone**, *β*-bromo-, and *β*-hydroxy-, and its acetyl compound (BLAISE and HERMAN), 1909, A., i, 633.
- α*-hydroxy-, *p*-nitrophenylhydrazones (BLAISE and HERMAN), 1910, A., i, 534.
- Dipropylmalonamic acid**, ethyl ester (CONRAD and ZART), 1905, A., i, 755; (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 903.
- Dipropylmalonamide** (CONRAD and ZART), 1905, A., i, 754.
- Dipropylmalonic acid**, ethyl ester, equilibrium between potassium carbonate, water and (M'DAVID), 1910, A., ii, 837.
- potassium ethyl ester-salt, electrolysis of (CRICHTON), 1906, T., 929; P., 162.
- Dipropylmalonuramide** (CONRAD and ZART), 1905, A., i, 754.
- Dipropylmalonylbenzidine** (REMFREY), 1911, T., 622.
- Dipropylmalonylcarbamide**. See 5:5-Dipropylbarbituric acid.
- Dipropylmalonyldimalonamide** (REMFREY), 1911, T., 619.
- 5:5-Dipropylmalonylguanidine** (FISCHER and DILTHEY), 1905, A., i, 37; (MERCK), 1905, A., i, 751.
- Dipropylmalonylmalonamide** (REMFREY), 1911, T., 618.
- Dipropylmalonyl-*p*-phenetidine** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1906, A., i, 497.
- Dipropylolivil** (KÖRNER and VANZETTI), 1912, A., i, 352.
- Dipropylloxadiazole** (STOLLÉ and ZINSER), 1904, A., i, 696.
- Diisopropylloxadiazole** (STOLLÉ and GUTMANN), 1904, A., i, 697.
- Di-*p*-propylphenyliodinium**, and iodo-, hydroxides and salts (WILLGERODT and SCKERL), 1903, A., i, 747.
- Di-*n*- and -*iso*-propylphthalides** (BAUER), 1909, A., i, 585.
- Dipropylcyclopropanecarbinol**, and its acetate and pyruvate (BOUVEAULT and LOCQUIN), 1910, A., i, 93.
- Dipropylpropionamide** (v. BRAUN), 1904, A., i, 90.
- 3:4-Dipropyl-5-pyrazolones**, *n*- and *n*-*iso*- (LOCQUIN), 1904, A., i, 552.
- Dipropylquinoline** and its picrate (VAN HOVE), 1907, A., i, 174.
- Diisopropylquinoline** and its picrate (VAN HOVE), 1908, A., i, 828.

- 3:3'-Dipropylrubazonic acid** (WAHL and DOLL), 1912, A., i, 537.
- Dipropylstannic bromide** (PFEIFFER, LEHNHARDT, LUFTENSTEINER, PRADE, SCHNURMANN, and TRUSKIER), 1910, A., i, 724.
- Di-*p*-isopropylstilbene** and its dibromide (LAW), 1907, T., 760; (PASCAL and NORMAND), 1912, A., i, 146.
- Dipropylstilbeneacetone** (v. LIPPMANN and FRITSCH), 1905, A., i, 443.
- Dipropylthallium compounds** (MEYER and NORMAND), 1904, A., i, 656.
- 5:5-Dipropylthiobarbituric acid** (EINHORN), 1908, A., i, 315; (MERCK), 1911, A., i, 683.
- N*-Dipropylthiocarbamic acid**, ethyl ester (*S*-ethyl-*N*-dipropyldithiourethane) (v. BRAUN), 1903, A., i, 14.
- Dipropylthiodiazole** (STOLLÉ and ZINSER), 1904, A., i, 696.
- Diisopropylthiodiazole** (STOLLÉ and GUTMANN), 1904, A., i, 697.
- 2:5-Dipropyl-1:3:4-triazole** (STOLLÉ and ZINSER), 1904, A., i, 696.
- 2:5-Diisopropyl-1:3:4-triazole** (STOLLÉ and GUTMANN), 1904, A., i, 697.
- Dipropylurethane** (v. BRAUN), 1903, A., i, 611.
- Diprotocatechuic acid** (FISCHER and FREUDENBERG), 1911, A., i, 875.
- Dipterocarpol** and its anhydride (VAN ITALLIE), 1912, A., i, 352.
- Dipterocarpon** and its oxime (VAN ITALLIE), 1912, A., i, 352.
- Dipterocarpus**, fat of the fruits of the (KLIMONT), 1905, A., ii, 126.
- Dipteryx odorata*, copal resin and a new kino from the fruit and bark of (HECKEL and SCHLAGDENHAUFFEN), 1904, A., i, 332.
- Dipyrazoleanthrone** (MÖHLAU, VIERTTEL, and REDLICH), 1912, A., i, 705.
- 1:1'-Dipyridonyl-5:5'-dicarboxylic acid**, 3:3'-dibromo-, methyl ester (v. PECHMANN and MILLS), 1904, A., i, 1042.
- Dipyridylmethane**. See 2:2-Methylene-dipyridole.
- Di-2-pyridyl-*o*-, -*m*-, and -*p*-phenylenediamines** and their salts (FISCHER and MERL), 1903, A., i, 52.
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- 8:8'-Diquinolyl** and its salts (v. NIEMENTOWSKI and SEIFERT), 1905, A., i, 300.
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- 6:6'-Diquinolyl-2:2'-dihydroxydiphenyl-4:4'-dicarboxylic acid** (CHEMISCHE FABRIK AUF AKTIEN FORM. E. SCHERING), 1912, A., i, 812.
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- Disulphides**, organic, complex compounds of (TSCHUGAEFF), 1908, A., i, 615.
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- Disulphidoacetic acid**, preparation of (KALLE & Co.), 1908, A., i, 605.
- 4:4'-Disulphidodibenzenesulphonyl chloride** and dianilide (ZINCKE and FROHNEBERG), 1909, A., i, 643.
- Disulphidodisuccinic acid** (BILLMANN), 1906, A., i, 626.
- 2:5-Disulphido-*p*-phenylenediamine** (GREEN and PERKIN), 1903, T., 1208; P., 206.
- Disulphinic acids**, aromatic (TRÖGER and MEINE), 1904, A., i, 30.
- Disulphoacetaldehydesulphoxylates**, preparation of (CHEMISCHE FABRIK VON HEYDEN), 1909, A., i, 880.
- Disulpho-acids**, preparation of (BILLMANN), 1906, A., i, 625.
- 3:4-Disulphoazolidine**, 2-imino-5-thio- (HANTZSCH and WOLFEKAMP), 1904, A., i, 719.
- 2:2'-Disulphodiphenyl sulphide**, 4:4'-diamino- and its bisdiazonium anhydride (SCHMIDT), 1906, A., i, 243.
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- 2':2''-Disulphodiphenylbisazo- α -naphthol-4-sulphonic acid** and β -naphthol-3:6-disulphonic acid and their salts (ELBS and WOHLFAHRT), 1903, A., i, 213.
- 2':2''-Disulphodi-phenyl- and -*o*-tolyl-bisazo- α -naphthylamine-4-sulphonic acids** (ELBS and WOHLFAHRT), 1903, A., i, 213.
- 2:2'-Disulphodi-*o*-tolylbisazosalicylic acid**, salts (ELBS and WOHLFAHRT), 1903, A., i, 213.
- 6:8-Disulphonaphthalene-2-azo- α -naphthalene-4-azo- α -hydroxynaphthoic acid** (SIRCAR and WATSON), 1912, A., i, 1038.
- 6:8-Disulphonaphthalene-2-azo- α -naphthalene-4-azosalicylic acid** (SIRCAR and WATSON), 1912, A., i, 1038.
- 2:6-Disulpho-1:8-naphthalic acid** and its barium salt and anilide (BARGELLINI), 1906, A., i, 184.
- Disulphonates** (POSNER and HAZARD), 1903, A., i, 242; (POSNER), 1904, A., i, 322.
- Disulphonates**, multi-membered cyclic (AUTENRIETH and GEYER), 1909, A., i, 6.
- α -Disulphonates**, aromatic (HILDITCH), 1908, T., 1524; P., 192.
- Disulphoxides**, preparation and constitution of (HINSBERG), 1908, A., i, 875.
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- α -Disulphoxides**, physico-chemical evidence of the structure of (HILDITCH), 1910, T., 1091; P., 95.
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- Disyringic acid** (FISCHER, FREUDENBERG, and LEPSIUS), 1911, A., i, 875.
- Ditetrahydroquinolylmethanes** (WEERMAN), 1906, A., i, 696.
- Ditetramethyl-diaminodiphenylmethyl-di-indoxyl** (REITZENSTEIN and BREUNING), 1910, A., i, 441.
- Ditetramethyl-diaminodiphenylmethyl-di-*o*- and -*p*-methylindoxyl** (REITZENSTEIN and BREUNING), 1910, A., i, 441.
- s*-Ditetramethyl-di-*p*-aminobenzhydryl-hydrazine** (CURTIUS and KOF), 1912, A., i, 732.
- p*-Di- $\alpha\beta$ -tetramethyleneindolylmethane** (BORSCHKE and KIENITZ), 1910, A., i, 782.
- Dithienylideneacetone** and its tetra-bromide (GRISHKEWITSCH TROCHIMOWSKY, and MATSCHUREVITSCH), 1912, A., i, 642.
- 4:4'-Dithioaniline** and its acetyl and dibenzylidene derivatives (HINSBERG), 1906, A., i, 654.
- Dithiobenzanilide** (HINSBERG), 1906, A., i, 655.
- Dithiobenzoyl disulphide** (HOUBEN and POHL), 1906, A., i, 847.
- Dithiocarbamates**, aromatic (LOSANITSCH), 1907, A., i, 693.
- Dithiocarbamic acid**, barium salt (ANDREASCH), 1908, A., i, 684.
- Dithiocarbamic acids**, metallic salts of (DELÉPINE), 1907, A., i, 594; 1908, A., i, 511.
- Dithiocarbaminoacetic acid**, ammonium salt of (ANDREASCH), 1910, A., i, 694.
- α -Dithiocarbaminopropionic acid**, ammonium salt of (ANDREASCH), 1910, A., i, 695.
- Dithiodiglycoll-phenyl and -*p*-tolyl-hydrazides** (FRERICHS and FÖRSTER), 1910, A., i, 191.

- Dithio-*p*-dimethylaminobenzaldehyde** and its hydrosulphide (MANCHOT, ZAHN, and KRÄNZLEIN), 1906, A., i, 753.
- 1:2-Dithiolanthraquinone.** See Alizarin, *dithio*.
- 1:5-Dithiolanthraquinone**, diphenyl and di-*p*-tolyl ethers of (DECKER, v. FELLEBERG, and FERRARIO), 1907, A., i, 1067.
- sodium derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 941.
- 1:8-Dithiolanthraquinone**, derivatives of (GATTERMANN), 1912, A., i, 1001.
- 2:4-Dithiolanthraquinone**, 1-amino-, and its derivatives (LENHARD), 1912, A., i, 998.
- Dithiolcarbonateacetic acid** and its ethyl ester (BIILMANN), 1908, A., i, 143.
- β -Dithiolcarbonatepropionic acid** (BIILMANN), 1908, A., i, 143.
- 2:6-Dithiolketopenthiophen-3:5-dicarboxylic acid**, ethyl ester (APITZSCH and KELBER), 1909, A., i, 826.
- α -Dithiolpentane** (*pentamethylene mercaptan*) and its lead derivative and dibenzoate (AUTENRIETH and GEYER), 1909, A., i, 6.
- 2:5-Dithiol-*p*-phenylenediamine** (GREEN and PERKIN), 1903, T., 1208; P., 206.
- Dithiolphthalic acid**, methyl ester (REISSERT and HOLLE), 1911, A., i, 981.
- Di- α -thionaphthoyl disulphide** (HOUBEN and POHL), 1906, A., i, 848.
- Dithionate and Dithionic acid.** See under Sulphur.
- $\gamma\gamma$ -Dithiophenoylpentane** (FREUND and FLEISCHER), 1910, A., i, 492.
- Dithiophenylacetyl disulphide** (HOUBEN and POHL), 1906, A., i, 847.
- $\alpha\gamma$ -Dithiophenyl- α -diphenylpentan- ϵ -one** (POSNER), 1904, A., i, 325.
- Dithiophosphoric acid.** See under Phosphorus.
- Dithiopiperonaldehyde** and its hydrosulphide (MANCHOT and ZAHN), 1906, A., i, 752.
- 2:6-Dithiothymine** (WHEELER, McFARLAND, and STOREY), 1910, A., i, 139.
- Dithio-*m*-tolylenediamine** (SCHULTZ and BEYSCHLAG), 1909, A., i, 269.
- Dithiovanillin** and its benzoyl and bromo-derivatives (MANCHOT and ZAHN), 1906, A., i, 752.
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- Dithymol**, formation of (BRISSEMORET and BLANCHETIÈRE), 1910, A., i, 314.
- Dithymol**, preparation of, and the action of bromine on (COUSIN and HÉRISSEY), 1908, A., i, 84, 162.
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- Dithymolpiperazine** (STÉVIGNON), 1910, A., i, 781.
- Dithymolylamine ethers** and their salts (DECKER and SOLONINA), 1905, A., i, 197.
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- chloro-derivatives (COUSIN), 1908, A., i, 337.
- Dithymoquinone**, *di*bromo- (COUSIN and HÉRISSEY), 1908, A., i, 162.
- Dititani-*o*-cresotic acid**, ammonium salt (HAUSER and LEWITE), 1912, A., i, 848.
- Dititanisalicyclic acid**, salts of (HAUSER and LEWITE), 1912, A., i, 847.
- Ditolane hexachloride** (MARCKWALD and KARZAG), 1907, A., i, 690.
- o*-Ditolhydrylbenzene** (GUYOT and VALLETTE), 1911, A., i, 653.
- Di-*o*- and -*p*-toluenesulphonimides** (HAGA), 1908, A., i, 871.
- Di-*p*-toluenesulphonyldianthranilide** (SCHROETER and EISLEB), 1909, A., i, 576.
- Di-*p*-toluenesulphonyl-3:3'-methylaminodiphenyl** (ULLMANN), 1904, A., i, 727.
- Di-*p*-toluenesulphonyl-3-nitro-*p*-toluidide** (ULLMANN and GROSS), 1910, A., i, 887.
- Di-*p*-4-toluenesulphonylphenyliodonium hydroxide** (WILLGERODT and PLOCKSTIES), 1912, A., i, 256.
- Di-*p*-toluenesulphonyltolylenediamine** (ULLMANN and GROSS), 1910, A., i, 887.
- Di-*o*-toluidinoacetanilide** (HELLER and EMBICH), 1904, A., i, 730.
- Di-*p*-toluidinoacetic acid** and its ethyl ester (v. OSTROMISLENSKY), 1908, A., i, 889.
- 1:4-Di-*o*-toluidinoanthraquinone** (GRANDMOUGIN), 1908, A., i, 809.
- 1:4-Di-*p*-toluidinoanthraquinone** (*quinizarin-green*) and its disulphonic acid (FRIEDLÄNDER and SCHICK), 1904, A., i, 679.
- 1:4-Di-*p*-toluidinoanthraquinone**, α -hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1906, A., i, 679.
- 1:5-Di-*p*-toluidinoanthraquinone** (KAUFLEB), 1903, A., i, 427.

- 4:5-Di-*p*-toluidinoanthraquinone**, 2-bromo-1-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 813.
- 4:9-Di-*p*-toluidinoanthraquinone**, 2:4-dibromo-1:6 di-amino- (SCHOLL and KRIEGER), 1905, A., i, 146.
- Di-*p*-toluidinoanthraquinonesulphonic acid** (FRIEDLÄNDER and SCHICK), 1904, A., i, 69.
- 3:6-Di-*p*-toluidino-*p*-benzoquinone-3-acetic acid** (MÖRNER), 1911, A., i, 57.
- Di-*p*-toluidinodihydroanthraquinones**, 1:4- and 1:5- (FRIEDLÄNDER and SCHICK), 1904, A., i, 679.
- 1:5-Di-*p*-toluidino-4:8-dimethylaminoanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1903, A., i, 564.
- Di-*p*-toluidinodi-*p*-methyldibenzyl** (LAW), 1912, T., 162.
- 2:5-Di-*p*-toluidino-3:4-di-*p*-tolyltetrahydro-1:3:4-thiodiazole** (HUGER-SHOFF), 1903, A., i, 865.
- Di-*p*-toluidinomethane**, dibenzoyl derivative (HELLER and KÜHN), 1904, A., i, 943.
- 1:5-Di-*p*-toluidino- β -methylantraquinone**, bromo- and chloro-derivatives (BADISCHE ANILIN- & SODA-FABRIK), 1903, A., i, 498.
- Di-*p*-toluidinomethylindophenol** (HELLER), 1912, A., i, 917.
- 3:6-Di-*o*- and -*p*-toluidino-9-phenylxanthanyl chlorides** (POPE and HOWARD), 1911, T., 552.
- Di-*m*-toluidinostilbene**, benzoyl derivatives, and their salts (BAILEY and McCOMBIE), 1912, T., 2277.
- Di-*o*-toluidindophenol** (HELLER), 1912, A., i, 917.
- Di-*p*-toluidomethylindophenol** (HELLER), 1912, A., i, 917.
- o*-Di-*p*-toluoylbenzene** (BAUER), 1905, A., i, 210; 1909, A., i, 585.
- s*-Di-*o*-, -*m*-, and -*p*-toluoylhydrazides** (STOLLÉ and STEVENS), 1904, A., i, 626.
- Ditoluquinhydrone** and its derivatives (MOIR), 1911, P., 226.
- Ditoluquinone** and its derivatives and dibromo- (MOIR), 1911, P., 226.
- Ditoluquinonedichlorodi-imine** (SCHLENK and KNORR), 1909, A., i, 37.
- meri-Ditoluquinonedii-monium chloride** and dibromo- and dichloro-, and their salts (SCHLENK and KNORR), 1909, A., i, 37.
- Ditolyl**. See Dimethyldiphenyl.
- Di-*om*-tolyl and Di-*m*-tolyl sulphides** (MAUTHNER), 1906, A., i, 949.
- Di-*p*-tolyl diselenide** (TABOURY), 1906, A., i, 834.
- Ditolyl anilino-phosphates**, *o*-, *m*-, and *p*- (AUTENRIETH and GEYER), 1908, A., i, 157.
- sulphoxide ferrichloride** (HOFMANN and OTT), 1908, A., i, 84.
- Ditolyl**, 4:4'-diamino-, 2:2'-disulphide, and its hydrochloride and acetyl derivative (ZINCKE and ROLLHAÜSER), 1912, A., i, 550.
- 2:3:2':3'-tetranitro-, 5:5'-disulphide** (SCHULTZ and BEYSCHLAG), 1909, A., i, 269.
- Di-*o*- and -*p*-tolyl telluride haloids** (LEDERER), 1912, A., i, 853.
- oxides** (LEDERER), 1912, A., i, 853.
- Di-*p*-tolylacetaldehyde** and its oxime and semicarbazone (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 582.
- Ditolyl-4:4'-acetic acid**, 2:2'-diamino-, and its benzoyl derivative (HELLER and ASCHKENASI), 1910, A., i, 738.
- Ditolylacetoacetic acid**, methyl ester (GUYOT and BADONNEL), 1909, A., i, 305.
- Ditolylacetones**, *o*- and *p*-, and their oximes and semicarbazones (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 583.
- Ditolylamine**, diamino-, and its diacetyl derivative (ULLMANN and SCHMID), 1911, A., i, 71.
- Di-*o*-tolylamine**, di-*p*-amino-, new mode of formation of (BARBIER and SISLEY), 1906, A., i, 51.
- mp-Ditolylamine** and its hydrochloride (SCHOLL, SEER, and TRITSCH), 1911, A., i, 559.
- Di-*p*-tolylamine** and dibromo- (WIELAND), 1907, A., i, 1076.
- oxidation of** (WIELAND and GAMBARJAN), 1906, A., i, 453.
- 4:6-Di-*p*-tolylaminoanthrapyridone** (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 262.
- s-1:5-Di-*p*-tolylaminoanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1907, A., i, 942.
- aa-Di-*p*-tolyl-*l*-arabitol** (PAAL and KINSCHER), 1912, A., i, 31.
- Di-*o*-tolylarsinic acid**, di-*p*-amino-, and its acetyl derivative, and di-*p*-hydroxy- (BENDA), 1908, A., i, 747.
- 1:2-Ditolylisobenzofuran** and its phenylhydrazone (GUYOT and VALLETTE), 1911, A., i, 653.

- Ditolylbisazocresols** (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- Ditolylbisazophenol** and its sodium derivative (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- Ditolylbisazophenolsulphonic acids**, sodium salts, and their dibenzyl ethers (SCHULTZ and ICHENHAEUSER), 1908, A., i, 230.
- Di-*p*-tolylbishydrazimethylene**. See Bishydrazi-*p*-tolil.
- Di-*p*-tolylcarbamide**, acetyl and benzoyl derivatives (HELLER and KÜHN), 1904, A., i, 943.
- s*-Di-*p*-tolylcarbamide** (YOUNG and DUNSTAN), 1908, T., 1058; P., 136.
- 2:2'-Ditoly- ω '-dicarboxyamide** (KENNER and TURNER), 1911, T., 2110.
- 2:2'-Ditoly-6:6'-dicarboxylic acid** (MAYER), 1911, A., i, 870.
- 2:2'-Ditoly- ω '-dicarboxylic acid** (KENNER and TURNER), 1911, T., 2110; P., 93.
- 2:2'-Ditoly- ω '-dicarboxylonitrile** (KENNER and TURNER), 1911, T., 2109; P., 263.
- Ditolyldiethylcarbamide** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35.
- s*-Di-*o*-tolylldiethylcarbamide** (RASSOW and REUTER), 1912, A., i, 555.
- Ditolyldihydrazone-oxalacetic acid**, ethyl ester (RABISCHONG), 1903, A., i, 55.
- 1:2-Ditoly-1:2-dihydroisobenzofuran** and 2-hydroxy- (GUYOT and VALLETTE), 1911, A., i, 653.
- Di-*p*-tolylldihydrotetene**, dihydroxy-, and its anhydride (HEIDUSCHKA and GRIMM), 1912, A., i, 108.
- Di-*p*-tolylldihydrotetrazinedicarboxylic acid**, ethyl ester (BOWACK and LAPWORTH), 1905, T., 1869.
- p*-Ditolyldihydrotolazine** and its dichloro- (WIELAND), 1908, A., i, 1015.
- s*-Di-*o*-tolylldimethylcarbamide** and its tetranitro-derivative (RASSOW and REUTER), 1912, A., i, 555.
- s*-Di-*o*- and *p*-tolylldimethylmethylenediamines** (V. BRAUN), 1908, A., i, 685.
- s*-Di-*o*-tolylldimethylpentamethylenediamine** and its salts (V. BRAUN), 1908, A., i, 678.
- 9:12-Di-*p*-tolylldiphensuccindadiene** (BRAND), 1912, A., i, 960.
- 9:12-Di-*p*-tolylldiphensuccindane**, 9:12-dihydroxy- (BRAND), 1912, A., i, 960.
- Di-*p*-tolyl-4:4'-diphenylenedi-iodinium** hydroxide and its salts with acids (WILLGERODT and HILGENBERG), 1909, A., i, 908.
- 2:2'-Ditoly-5:5'-diphthaloylic acid** (SCHOLL and SEER), 1911, A., i, 463.
- Di-*p*-tolyl- α -disulphone** (HILDITCH), 1908, T., 1526; P., 192.
- 3:3'-Ditolyldisulphonic acid**, 4:4'-dihydroxy-, barium salt (MOIR), 1911, P., 227.
- 5:5'-Ditoly-2:2'-disulphonic acid**, 4:4'-dichloro-, and its barium salt (ELBS and WOHLFAHRT), 1903, A., i, 213.
- Di-*p*-tolylldisulphoxyethane**, and its tetrabromide (FROMM and RAIZISS), 1910, A., i, 554.
- Ditolylene *p*-disulphoxide** (HILDITCH), 1910, T., 2591.
- o*- and *m*-Ditolylene oxide** (SABATIER and MAILHE), 1910, A., i, 669.
- Di-*p*-tolylene oxide** (SABATIER and MAILHE), 1912, A., i, 767.
- Ditolyleneiodonium hydroxide** (MASCARELLI), 1909, A., i, 907.
- Di-*p*-tolylenephthalide** (SCHOLL and SEER), 1911, A., i, 454.
- s*-Di-*o*-tolylethane** (2:2'-dimethyldibenzyl), 4:4'-dinitro- (GREEN, DAVIES, and HORSFALL), 1907, T., 2080.
- Di-*p*-tolylethane** from paraldehyde and toluene (FISCHER and CASTNER), 1910, A., i, 662.
- as*-Di-*p*-tolylethane**, constitution of (LAVAUZ), 1905, A., i, 698.
- Ditolylethylcarbamide?** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35.
- Di-*p*-tolylethylene** (STOERMER), 1907, A., i, 204.
- from paraldehyde and toluene, and ω -bromo- (FISCHER and CASTNER), 1910, A., i, 662.
- as*-Di-*p*-tolylethylene** (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- Di-*o*- and *p*-tolylethylenediamines**, di- α -bromo-*n*- and -*iso*-butyryl derivatives, reactions of, with phenol and α - and β -naphthols (BISCHOFF), 1905, A., i, 86.
- di- α -propionyl derivative, reactions of, with the sodium derivatives of phenol and α - and β -naphthols (BISCHOFF, MATZ, and V. WODZINSKY), 1905, A., i, 85.
- di- α -bromoisovaleryl derivatives, reactions of (BISCHOFF), 1905, A., i, 158.
- Ditolylethylenimide** and its salts (BRUNNER and RAPIN), 1908, A., i, 863.
- Di-*p*-tolylformazylcarboxylic acid**, menthyl ester (LAPWORTH), 1903, T., 1125; P., 149.
- Di-*o*-tolylformazylformic acid**, ethyl ester (RABISCHONG), 1904, A., i, 273.

- Di-*m*-tolylguanidine** (JOHNSON and CHERNOFF), 1912, A., i, 219.
- Ditolylguanidines**, *o*- and *p*-, amino-, benzoyl derivatives, and the triazoles from (BUSCH), 1907, A., i, 259.
- Di-*o*-tolylguanyl-4-phenylsemicarbazide** (BUSCH and BLUME), 1907, A., i, 261.
- Di-*p*-tolyl-4-hydroxy-3-carboxynaphthylacetic acid** and its dimethyl ester (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 468.
- Di-*p*-tolyl-4-hydroxy-3-carboxynaphthylcarbinol** (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 468.
- Di-*p*-tolylideneacetone**. See Di-*p*-methylstyryl ketone.
- Ditolyldienethiocarbohydrazide** (STOLLÉ and BOWLES), 1908, A., i, 474.
- Di-*o*-tolylimino-oxalic acid**, ethyl ester (BAUER), 1907, A., i, 603.
- Ditolyliodinium hydroxides and salts** (WILLGERODT and UMBACH), 1903, A., i, 744.
- m-p*-Ditolyl ketone**, and its oxime and semicarbazone (LAVAUX and LOMBARD), 1910, A., i, 748.
- Di-*p*-tolyl ketone** and its phenylhydrazone (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- Ditolylmalic acid**, methyl and ethyl esters (GUYOT and ESTEVA), 1909, A., i, 237.
- Ditolylmethane**, *diamino*-, hydrazine derivatives of (FINGER and BAUMANN), 1906, A., i, 892.
- Di-*o*-tolylmethane**, 4:6:4':6'-*tetrabromo*-5:5'-*dihydroxy*-, and 5:5'-*dihydroxy*- (AUWERS and RIETZ), 1907, A., i, 919.
- Di-*p*-tolylmethane** from formaldehyde and toluene, and *diamino*-, and its diacetyl derivative (FISCHER and GROSS), 1910, A., i, 661.
- action of, with dichloromethane (LAVAUX), 1911, A., i, 533.
- Di-*p*-tolylmethane**, *hexabromodi-m*-hydroxy-, and its acetyl derivatives and compounds with bases (AUWERS, KIPKE, SCHRENK, and SCHRÖTER), 1906, A., i, 262.
- Ditolylmethanes**, *o*-, *m*-, and *p*-, *dichloro*- (BÖSEKEN), 1905, A., i, 424.
- Di-*p*-tolylmethanedicarboxylic acid** (LIEBERMANN and RAHNS), 1912, A., i, 466.
- 9:10-*p*-Ditolyl-2-methylantracene** (GUYOT and VALLETTE), 1911, A., i, 653.
- Ditolylmethylcarbamide** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35.
- 9:10-Ditolyl-2-methyldihydroanthracene**, 9:10-*dihydroxy*- (GUYOT and VALLETTE), 1911, A., i, 653.
- s*-Di-*p*-tolylmethylenediamine**, 2:2'-*dinitro*- (HOUBEN and ARNOLD), 1908, A., i, 534.
- Di-*p*-tolyl methyl ether**, disulphide and disulphoxide (HILDITCH), 1911, T., 1100.
- Ditolylmethylpyridine** and its pierate (THOMAE and LEHR), 1907, A., i, 139.
- 3-Ditolyl-2-methyl-4-quinazolone**, 4'-amino-, and 4'-amino-7-acetylamino- (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.
- Ditolyl-methyl- and -ethyl- ψ -dithiobiurets** (JOHNSON and CRAMER), 1903, A., i, 753.
- ω -Di-*p*-tolyl-1:4-naphthaquinomethane** (ZALESKA-MAZURKIEWICZ and BISTRZYCKI), 1912, A., i, 468.
- 2:5-Di-*o*-, *m*-, and *p*-tolyl-1:3:4-oxadiazoles** (STOLLÉ and STEVENS), 1904, A., i, 626.
- Ditolyloxalimino-chlorides**, *o*-, *m*-, and *p*- (BAUER), 1908, A., i, 695.
- and their reactions (BAUER), 1907, A., i, 603.
- Di-*o*-tolylloxaliminochloride-pyridinium chloride** and platinichloride (REITZENSTEIN and BREUNING), 1911, A., i, 226.
- Di-*p*-tolylloxanilide**, *dithio*- (v. MEYER and HEIDUSCHKA), 1903, A., i, 808.
- 1:5-Di-*o*- and *p*-tolylloxanthraquinones** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 797.
- 1:4-Ditolyloxybenzene**. See Quinol ditolyl ethers.
- Di-*m*-tolylloxy-*p*-benzoquinone**, *dibromo*- (TORREY and HUNTER), 1912, A., i, 475.
- Di-*p*-tolylloxy-*p*-benzoquinone**, *dibromo*-, *dichloro*-, and *diiodo*- (TORREY and HUNTER), 1912, A., i, 475.
- Di-*o*-tolylloxydipropylamine**, *dihydroxy*- (BOYD and KNOWLTON), 1909, T., 1805; P., 235.
- 9:10-Di-*o*-tolylloxy-9-phenyldihydroanthracene**, 10-hydroxy- (LIEBERMANN and LINDENBAUM), 1905, A., i, 522.
- α -Ditolyloxypropanes**, β -hydroxy-. See *s*-Glycerol ditolyl ethers.
- s*-Di-*p*-tolylpentamethylenediamine** and its additive salts and *dicyano*- and *dinitroso*- (v. BRAUN), 1907, A., i, 961.
- Di-*o*-tolylphenoxymethylcarbinol** (STOERMER, SCHENCK zu SCHWEINSBERG, SIBERN-SIBBERS, and RIEBEL), 1906, A., i, 582.

- Di-*p*-tolylphenylcarbinol-*O*-sulphomethylamide** (COBB and FULLER), 1911, A., i, 638.
- Di-*p*-tolyl *p*-phenylene disulphide** (BOURGEOIS and FOUASSIN), 1911, A., i, 964.
- Di-*p*-tolylphenylthiocarbamide, dithio-** (V. MEYER and HEIDUSCHKA), 1903, A., i, 809.
- Di-*p*-tolylphosphoric amidine** (CAVEN), 1903, T., 1048; P., 201.
- Ditolylphthalide, di-*m*-amino-, and its diazosulphate, di-*m*-hydroxy-, and di-*m*-nitro-** (V. BAAYER), 1907, A., i, 760.
- 4:4'-Ditolyl-3-phthaloylic acid** (SCHOLL and SEER), 1911, A., i, 453.
- $\alpha\gamma$ -Di-*o*-, -*m*-, and -*p*-tolylpropane, β -iminio- α -cyano-** (BEST and THORPE), 1909, T., 265; P., 28.
- $\alpha\alpha$ -Ditolylpropionic acid** (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- $\beta\beta$ -Di-*p*-tolylpropionyl chloride** (BISTRZYCKI and LANDTWINO), 1908, A., i, 270.
- $\beta\beta$ -Di-*p*-tolylpropylene- $\alpha\beta$ -glycol** (STOERMER, SCHENCK ZU SCHWEINSBERG, SIBBERN-SIBBERS, and RIEBEL), 1906, A., i, 583.
- Ditolylisopropylphosphorous acids and their salts** (BOYD), 1903, T., 1138; P., 202.
- 2:6-Di-*p*-tolylpyridine and its salts** (SCHOLTZ and WIEDEMANN), 1903, A., i, 487.
- 3:5-Di-*p*-tolyl-1:2:4-selenodiazole and its platinichloride** (BECKER and MEYER), 1904, A., i, 698.
- Di-*o*-tolylsuccinamide, diamino-, and its hydrochloride** (MEYER and JAEGER), 1906, A., i, 766.
- Di-*o*-tolylisuccinamide, diamino-** (MEYER and JAEGER), 1906, A., i, 766.
- 1:4-Di-*p*-tolylsulphonamidoanthraquinone** (ULLMANN and BILLIG), 1911, A., i, 490.
- Ditolylsulphone, o-hydroxy-, and its derivatives** (ZEHEENTER), 1912, A., i, 444.
- Di-*p*-tolylsulphonephenylmethane** (FROMM and RAIZISS), 1910, A., i, 555.
- Di-*p*-tolylsulphonethane, and di- and tetra-nitro-** (FROMM and RAIZISS), 1910, A., i, 555.
- Di-*o*-tolylsulphonylhydroxylamine** (HAGA), 1908, A., i, 870.
- Di-*p*-tolyltaurocarbamic anhydride** (WOLFFBAUER), 1904, A., i, 869.
- Di-*m*-tolyltetrazonium chloride, action of alcohols on** (WINSTON), 1904, A., i, 274.
- Ditolylthiocarbamide, ω -dicyano-** (V. BRAUN and BESCHKE), 1907, A., i, 123.
- Di-*o*-tolylthiocarbamide, action of acetyl chloride on** (DIXON and HAWTHORNE), 1907, T., 138.
- 2:5-Di-*p*-tolyl-1:3:4-thiodiazole** (STOLLÉ and STEVENS), 1904, A., i, 627.
- Di-*p*-tolyl dithioethane, and its tetrabromide, and di- and tetra-iodides** (FROMM and RAIZISS), 1910, A., i, 554.
- 2:3-Di-*o*-tolyl- ψ -thiohydantoin and its benzylidene derivative** (WHEELER and JAMIESON), 1903, A., i, 522.
- Di-*p*-tolylthiolanthraquinone** (GATTERMANN), 1912, A., i, 1002.
- 1:4-Di-*p*-tolylthiolanthraquinone-2-carboxylic acid** (BADISCHE ANILIN- & SODA-FABRIK), 1912, A., i, 980.
- Ditolyl-*o*-tolylhydriphenylcarbinol** (GUYOT and VALLETTE), 1911, A., i, 653.
- Di-*p*-tolyl-*m*-tolylloxamide, dithio-** (V. MEYER and E. MEYER), 1903, A., i, 810.
- Di-*p*-tolyl-*o*-tolyl-oxamide and -thiocarbamide, dithio-** (V. MEYER and E. MEYER), 1903, A., i, 810.
- Ditolyl triethyl ether** (BAMBERGER and BLANGEV), 1912, A., i, 692.
- 3:5-Di-*p*-tolyl-1-*m*-xylyltriazole, synthesis of** (V. WALTHER and KRUMBIEGEL), 1903, A., i, 661.
- Ditolyl-** See also Dimethyldiphenyl-.
- Di-*o*-triazophenyliodinium chloride** (FORSTER and SCHAEFFI), 1912, T., 1366.
- Di-*o*-, -*m*-, and -*p*-triazophenyliodinium iodides, and the tetrachloride of the first** (FORSTER and SCHAEFFI), 1912, T., 1366.
- $\delta\epsilon$ -Di-2:4:5-trimethoxyphenyl- $\beta\eta$ -dimethyl- $\Delta\gamma$ -octene** (SZÉKI), 1909, A., i, 920.
- Di-2:4:5-trimethoxy- α -phenylethyl ether** (FABINYI and SZÉKI), 1906, A., i, 424.
- s-Ditrimethoxyphenylethylene and its bromine compound** (SZÉKI), 1906, A., i, 660.
- $\gamma\delta$ -Di-2:4:5-trimethoxyphenyl- $\Delta\beta$ -hexene and its dibromide** (FABINYI and SZÉKI), 1906, A., i, 424.
- $\alpha\alpha$ -Di-2:4:5-trimethylbenzylhydrazine and its salts and derivatives** (CURTIUS and FRANZEN), 1912, A., i, 309.
- Di-2:4:5-trimethylbenzylsemicarbazide** (CURTIUS and FRANZEN), 1912, A., i, 309.
- Di-2:4:5-trimethylbenzyltetrazone** (CURTIUS and FRANZEN), 1912, A., i, 309.

p-Di- α -trimethyleneindolymethane (BORSCHÉ and KIENITZ), 1910, A., i, 782.

Ditrimethylparaconylmalonic acid, ethyl ester (NOYES), 1905, A., i, 322.

s-Ditriphenylmethylcarbamide (v. MEYER and FISCHER), 1911, A., i, 120.

Dittany, white, oil of (SCHIMMEL & Co.), 1907, A., i, 67.

Diundecylideneazine (BLAISE and GUÉRIN), 1904, A., i, 142.

Diundecyl-oxadiazole and -thiodiazole (STOLLÉ and SCHÄTZLEIN), 1904, A., i, 697.

Diureines, behaviour of, towards acetic anhydride (BILTZ and HORRMANN), 1908, A., i, 62.

Diuresis (FILEHNE; RUSCHHAUPT; POTOTZKY; ERCKLENTZ), 1903, A., ii, 33; (FILEHNE and RUSCHHAUPT; FILEHNE and BIBERFELD), 1903, A., ii, 33, 501; (BIBERFELD), 1905, A., ii, 48; 1908, A., ii, 972; (GINSBERG), 1912, A., ii, 1079; (COW), 1912, A., ii, 1080. criticism on the researches on (ASHER), 1904, A., ii, 500.

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influence of colloids on (KNOWLTON), 1912, A., ii, 71.

caffeine, mechanism of (LOEWI, FLETCHER, and HENDERSON), 1905, A., ii, 739.

calomel (FLECKSEDER), 1912, A., ii, 582.

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saline (CUSHNY), 1903, A., ii, 91.

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urea, mechanism of (HENDERSON and LOEWI), 1905, A., ii, 739.

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Diurethaneglyoxylic acid and its ethyl ester and amide (SIMON and CHAVANNE), 1906, A., i, 636.

Diurethanepyruvic acid, formation and dissociation of (SIMON), 1906, A., i, 404.

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Diuretic action of hypertonic salt solutions (SOLLMANN), 1903, A., ii, 562.

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Diuretics, effect of, with a diet poor in salts (HASKINS), 1904, A., ii, 191.

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Di-*n*- and -*iso*-valeramides (TARBOURIECH), 1903, A., i, 681.

Disovaleric acid, α -dithio-, diethyl ester (PRICE and TWISS), 1909, T., 1050; P., 165.

Disovalerylcabamide, $\alpha\alpha$ -dihydroxy-, and its metallic salts (CLEMMENSEN and HEITMAN), 1909, A., i, 775.

Divalolactone, constitution of (LOSANITSCH), 1911, A., i, 804.

Divanadyl hypophosphite. See under Vanadium.

Divanillylidenedipicolinic dihydrazide (MEYER and MALLY), 1912, A., i, 515.

Divanillylidenecyclopentanone (MENTZEL), 1903, A., i, 497.

Divanillylidenequinolinic hydrazide (MEYER and MALLY), 1912, A., i, 515.

Divaric acid (HESSE), 1911, A., i, 209.

Divaricatic acid, and its salts and esters (HESSE), 1911, A., i, 209.

Divaricatinic acid, salts and ethyl ester of (HESSE), 1911, A., i, 209.

Divarinol and its diacetate (HESSE), 1911, A., i, 209.

Diveratryl-dichloroethane, and -chloroethylene (FREITSCH), 1904, A., i, 94.

$\alpha\delta$ -Diveratrylfulgenic acid (STOBBE and LEUNER), 1911, A., i, 378.

$\alpha\delta$ -Diveratrylfulgide (STOBBE and LEUNER), 1911, A., i, 378.

Divers' palsy (HILL and MACLEOD), 1904, A., ii, 54.

Divers' sickness, oxygen inhalation as a means of preventing (HAM and HILL), 1905, A., ii, 728.

s-Divinylethylene oxide (HEUX), 1912, A., i, 599.

s-Divinyl glycol, diformate of (VAN ROMBURGH and VAN DORSSSEN), 1906, A., i, 141.

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Dixanthone, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), 1911, A., i, 791.

Dixanthyl (FOSSE), 1906, A., i, 975. derivatives, new (SILBERRAD and ROY), 1908, P., 205.

Dixanthylbenzene 2:4:5:6-tetracarboxylic acids, *m*- and *p*-, 3:6:9:3':6':9'-hexahydroxy- and their octabromoderivatives and their salts (SILBERRAD and ROY), 1906, T., 1802; P., 252.

Dixanthyl-carbamide and -thiocarbamide (FOSSE), 1908, A., i, 41.

Dixanthylene tetrabromide and tetraiodide (HANTZSCH and DENSTORFF), 1906, A., i, 746.

- as-m-Dixylenol* (BAMBERGER), 1907, A., i, 519; (BAMBERGER and BRUN), 1907, A., i, 520.
- Di-m-xylylilaconitic acid* (RUHEMANN), 1906, T., 1851; P., 284.
- 3-6-Di-m-xylyldino-*p*-benzoquinone-3-acetic acid** (MÖRNER), 1911, A., i, 57.
- Di-2-m-xylyldoinodiphenol* (HELLER), 1912, A., i, 917.
- Di-p-xyloquinol monomethyl ether* and its derivatives (BAMBERGER and BLANGEY), 1911, A., i, 883, 884.
- p-Dixyloquinone, dihydroxy-*, hydrolysis of (FIGHTER and KAPPELER), 1908, A., i, 660.
- Di-m-xylyl-4:4'-acetic acid, 2:2'-diamino-*, and its derivatives (HELLER and ASCHKENASI), 1910, A., i, 738.
- Di-m-xylylamine, s-hexanitro-*, preparation of (BLANKSMA), 1907, A., i, 123.
- Dixylylaminedisulphonic acid, o-amino-* (ZINCKE and KUCHENBECKER), 1904, A., i, 459.
- s-Dixylyldimethyl ether* (CARRÉ), 1910, A., i, 620.
- Di-as-m-xylyl-4:4'-diphenylenediodinium hydroxide and iodide* (WILLGERODT and HILGENBERG), 1909, A., i, 908.
- Di-p-xylyl- α -disulphone* (HILDITCH), 1908, T., 1527; P., 192.
- cycloDi-o-xylylene, dithio-*, and its dibromide (AUTENRIETH and BRÜNING), 1903, A., i, 272.
- Di-p-xylylenedipiperidinium* salts (SCHOLTZ), 1911, A., i, 327.
- cycloDi-o-xylylenedisulphone* (AUTENRIETH and BRÜNING), 1903, A., i, 273.
- as-Di-o-xylylethylene* (BISTRZYCKI and REINTKE), 1905, A., i, 285.
- Di-m-xylylethylenedisulphone*, preparation of (TRÖGER and HILLE), 1903, A., i, 808.
- Dixylylmalonic acid, methyl and ethyl esters* (GUYOT and ESTEVA), 1909, A., i, 237.
- Di-3:5-xylylmethane, di-2-hydroxy-*, and its diacetate and perbromide (FRIES and KANN), 1907, A., i, 614.
- Dixylylmethylenediamines, m-4- and p-5- synthesis* of (SENIER and COMPTON), 1907, T., 1929; P., 247.
- Di-o-3-, m-4- and p-xylylphthalidimides* (KUHARA and KOMATSU), 1911, A., i, 207.
- au-Di-o- and -m-xylylpropionic acids* (BISTRZYCKI and REINTKE), 1906, A., i, 285.
- Dixylyls*. See Tetramethyldiphenyls.
- Djamboe*. See *Psidium guajava*.
- Docosyl alcohol and its phenylurethane** (WILLSTÄTTER, MEYER, and HÜNI), 1911, A., i, 146.
- and its urethane (WILLSTÄTTER and MAYER), 1908, A., i, 383.
- Dodecahydroanthracene** (GODCHOT), 1906, A., i, 76.
- Dodecahydrobenzophenone**. See *Dicyclohexyl ketone*.
- Dodecahydrodiphenyl**. See *Dicyclohexyl*.
- Dodecahydrodiphenylmethane**. See *dicycloTridecane*.
- Dodecahydrophenanthrene** (SCHMIDT and MEZGER), 1907, A., i, 1023.
- Dodecahydrotriphenylene** (MANNICH), 1907, A., i, 205.
- Dodecamethylacridine haloids** (SENIER and AUSTIN), 1904, T., 1202; P., 176.
- Dodecane** (*dimethyldiisobutylethane*) (CLARKE and SHREVE), 1906, A., i, 473.
- Dodecane, α -diamino-**, hydrochloride, platinumchloride and benzoyl derivative (v. BRAUN and TRÜMLER), 1910, A., i, 26.
- α -dichloro-* (v. BRAUN and SOBECKI), 1911, A., i, 598.
- dihydroxy-*. See *Methylisobutylpinacene*.
- Dodecanedicarboxylic acid** (FRANKE and HANKAM), 1910, A., i, 460.
- and its methyl ester (BARROWCLIFF and POWER), 1907, T., 563; P., 70.
- Dodecane- ζ -diols, α - and β -, ζ -Dodecanol and its pyruvate and its semicarbazone, and ζ -Dodecanone and its semicarbazone** (BOUVEAULT and LOCQUIN), 1905, A., i, 573.
- Dodecane- γ -dione** (BLAISE and KÖHLER), 1909, A., i, 205.
- Dodecanetetracarboxylic acid and its ethyl ester** (FRANKE and HANKAM), 1910, A., i, 460.
- Dodecanoic acid, diaminotrihydroxy-**, and its hydrochloride and salts (FISCHER and ABDERHALDEN), 1904, A., i, 1066.
- Dodecenoic acid**. See $\alpha\alpha\beta\zeta$ -Tetramethyl- Δ^6 -octenoic acid.
- Dodecyl alcohol** (*dimethylnonylcarbinol*) (HOUBEN), 1903, A., i, 48.
- Dodecylbenzamide, μ -chloro-** (v. BRAUN and SOBECKI), 1911, A., i, 598.
- Dodecylthiophanesulphonate** (MABERY and QUAYLE), 1906, A., i, 395.
- Dogs**, chemical composition of body of (STOCKHAUSEN), 1909, A., ii, 1034.

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Dog-fish, acidity of the gastric juice of the (VAN HERWERDEN and RINGER), 1911, A., ii, 1109.

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- Dolomite**, chemical studies of (VESTERBERG), 1903, A., ii, 302.
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- Dossetin** from the Japanese dyewood "Doss" (ITO), 1908, A., i, 441.
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* A correction: not a synonym.

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in the gastric juice (KUTTNER and PULVERMACHER), 1911, A., ii, 513.

Enzymes, peptolytic, in invertebrates (ABDERHALDEN and HEISE), 1909, A., ii, 907.

in rabbits' and dogs' plasma, and in red blood corpuscles of these animals (ABDERHALDEN and PINCUSOHN), 1909, A., ii, 816.

in rabbit's serum under varying conditions (ABDERHALDEN and WEICHARDT), 1909, A., ii, 908.

in germinating and ungerminated seeds of various plants (ABDERHALDEN and DAMMHAHN), 1908, A., ii, 1065.

in the stomach contents (ABDERHALDEN and MEDIGRECEANU), 1908, A., ii, 1049; (ABDERHALDEN and SCHITTENHELM), 1909, A., ii, 414.

in parasitic worms (ABDERHALDEN), 1911, A., ii, 1009.

detection of (ABDERHALDEN and SCHITTENHELM), 1909, A., ii, 840.

detection of, in animal and vegetable tissues (ABDERHALDEN), 1910, A., ii, 666.

peptone-splitting, of the pancreas and intestine (WEINLAND; VERNON), 1904, A., ii, 57.

proteolytic (HERZOG), 1904, A., i, 129; (HIBAYAMA), 1910, A., i, 449.

study of (KOBER; FERNBACH and SCHOEN), 1911, A., i, 824.

are rennetic and, identical? (BANG), 1905, A., ii, 100.

the combined action of (LEVENE and STOOKEY), 1904, A., ii, 674.

destructive effects of shaking on (SHAKLEE and MELTZER), 1909, A., i, 980.

action of (ABDERHALDEN and HUNTER), 1908, A., ii, 782.

action of, on clupeine (ROGOZIŃSKI), 1912, A., i, 672.

action on protamines (TAKEMURA), 1910, A., i, 82.

influence of oxygen on the work of, in dead plants (PALLADIN and KRAULE), 1912, A., ii, 291; (PALLADIN, ALEXANDROFF, IWANOFF, and LEVITSKY), 1912, A., ii, 800.

of animal tissue juices and of intestinal juice (ABDERHALDEN and TERUUCHI), 1906, A., ii, 873.

in germinating barley (WEIS), 1904, A., ii, 280.

in leucæmic blood (SCHUMM), 1904, A., ii, 64, 747; (ERBEN), 1904, A., ii, 573.

Enzymes, proteolytic, of invertebrates (SELLIER), 1911, A., ii, 1113.

of ox-spleen and -serum (HEDIN), 1904, A., ii, 58.

in plants (VINES), 1903, A., ii, 321; (JAVILLIER), 1903, A., ii, 506.

of the pyloric and duodenal juices (ABDERHALDEN and RONA), 1906, A., ii, 462.

of germinating seeds of wheat and lupines, action of, on polypeptides (ABDERHALDEN and SCHITTENHELM), 1907, A., i, 104.

vegetable, comparative investigations of (ABDERHALDEN and TERUUCHI), 1907, A., i, 104.

detection of, by means of elastin (ABDERHALDEN and KIESSEWETTER), 1911, A., ii, 999.

use of optically active polypeptides for estimating the activity of (ABDERHALDEN and KOELKER), 1907, A., ii, 488.

purine, of guinea pig and rabbit (MITCHELL), 1910, A., ii, 731.

reducing (POZZI-ESCOT), 1903, A., i, 670; (BACH), 1911, A., i, 412, 759; 1912, A., ii, 183.

are there, in the animal body? (HEFFTER), 1908, A., ii, 1054.

respiration, formation of, in injured bulbs of *Allium cepa* (KRASNOSSELSKY), 1906, A., ii, 572.

formation of different, depending on the stage of development of plants (PALLADIN), 1906, A., ii, 481.

of moulds (KOSTYTSCHEFF), 1904, A., ii, 633.

of plants (ZALESKI), 1911, A., ii, 323.

of plants, work of, under different conditions (PALLADIN), 1906, A., ii, 570.

sucroclastic, rate of change conditioned by, and influence of the products of change on the (ARMSTRONG), 1904, A., i, 956, 957.

in *Beta vulgaris* (ROBERTSON, IRVINE, and DOBSON), 1909, A., ii, 695.

sugar-forming, of the liver (BORCHARDT), 1904, A., ii, 188.

sugar-destroying, in organs (HIRSCH), 1904, A., ii, 60; (FEINSCHMIDT), 1904, A., ii, 61.

vanillin as a test for (POZZI-ESCOT), 1907, A., ii, 516.

estimation of, in the faeces (URY), 1910, A., ii, 145.

Enzymes. See also :—

Adenase.
 Aesculase.
 Alcohol-oxydase.
 Aldehydase.
 Aldehydemutase.
 Allisin.
 Amidase.
 Amygdalase.
 Amylase.
 Amylocoagulase.
 Amylopectinase.
 Anaeroxydase.
 Analase.
 Anti-emulsin.
 Antileucoprotease.
 Antipepsin.
 Antiprotease.
 Antithrombin.
 Arginase.
 Butyrase.
 Carboxylase.
 Catalase (philothion).
 Catecholase.
 Cellase.
 Cellulase.
 Cerebrin.
 Chlorophyllase.
 Cholesterase.
 Chymosin.
 Diastases.
 Emulsin.
 Endotryptase.
 Enterokinase.
 Enterolipase.
 Erepsin.
 Ereptase.
 Fibrin-ferment.
 Gastro-lipase.
 Géase.
 Gelatinase.
 α -Glucose.
 β -Glucose.
 α -Glucosidase.
 Gluténase.
 Glutinasé.
 Glycerophosphatase.
 Glycogenase.
 Glyoxylase.
 Guanase.
 Gummases.
 Gynocardase.
 Hæmase.
 Hæmolysin.
 Hedera-peroxydase.
 Histozyne.
 Hydrogenase.
 β -Hydroxybutyrase.
 Indimulsin.
 Inulinase.
 Invertase (invertin, sucrase).

Enzymes. See also :—

Jaquemase.
 Kinase.
 Laccase.
 Lactase.
 Lactic acid ferments.
 Lactokinase.
 Lactolase.
 Leucoprotease.
 Levanase.
 Lienoprotease.
 Linase.
 Lipase.
 Maltase.
 Malt diastase.
 Malt oxydase.
 Manninotriase.
 Melibiase.
 Methylglucose.
 Monilia-invertase.
 Myrosin.
 Nuclease.
 Nucleinases.
 Nucleosidases.
 Nucleotidases.
 Oxydases.
 Oxygenases.
 Pancreas-steapsin.
 Pancreatin.
 Papain.
 Parachymosin.
 Pastorase.
 Pepsin.
 Perhydridase.
 Peroxydase.
 Phaseolunatase.
 Phenolase.
 Philocatalase.
 Phosphatase.
 Phytase.
 Populase.
 Primeverase.
 Protease.
 Protein-ferment.
 Prothrombin.
 Protrypsin.
 Prunase.
 Pseudo-sarcin.
 Ptyalin.
 Reductase.
 Rennet.
 Rennin.
 Revertase.
 Salicase.
 Saligenolase.
 Secretin.
 Seminase (Carubinase).
 Spermin.
 Steapsin.
 Synprotease.
 Takadiastase.

Enzymes. See also:—

Tetranuclease.
 Thrombin.
 Thromboplastin.
 Trehalase.
 Trypsin.
 Tryptase.
 Tyrosinase.
 Urease.
 Uricase.
 Uricolase (uricolytic ferment).
 Viscosaccharase.
 Zymase.
 Zymine.

Enzyme action (H. E. ARMSTRONG), 1903, T., 1305; P., 209; 1904, A., i, 956, 957, 1070; 1906, A., i, 126; 1910, P., 335; (H. E. ARMSTRONG and CALDWELL), 1904, A., i, 957, 1070; (VISSER), 1904, A., i, 540; (DAKIN), 1904, A., i, 1071; (FOKIN), 1904, A., i, 1071; ii, 119, 280; (LIEBERMANN), 1904, A., ii, 474; (BARENDRECHT), 1904, A., ii, 551, 719; 1906, A., i, 328; (SETER), 1905, A., i, 107; ii, 377, 380; (HENRI), 1905, A., ii, 237; (v. EULER), 1905, A., ii, 378; (E. F. ARMSTRONG), 1906, A., i, 127, 128; (H. E. ARMSTRONG and ORMEROD), 1907, A., i, 103; (CALDWELL and COURTAULD), 1907, A., i, 809; (H. E. and E. F. ARMSTRONG), 1907, A., i, 809; 1910, P., 334; (LOEVENHART; LOEVENHART and PEIRCE; LOEVENHART and SONDER), 1907, A., ii, 281; (H. E. ARMSTRONG and GLOVER), 1908, A., i, 712; (H. E. and E. F. ARMSTRONG and HORTON), 1908, A., i, 745; 1912, A., i, 816; (H. E. ARMSTRONG and HORTON), 1910, P., 384; A., i, 602; 1912, A., i, 594; (H. E. ARMSTRONG and EYRE), 1910, P., 335; 1912, A., i, 816; (LOEW; WETTER), 1911, A., i, 409; (BAYLISS), 1912, A., i, 328; (FALK and NELSON), 1912, A., i, 522, 593.

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laws of (GRÜTZNER and WALDSCHMIDT) 1911, A., i, 697.

Enzyme action, deviation of, from the unimolecular law (PIERCE), 1910, A., i, 907.

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reversible (POTTEVIN), 1906, A., i, 917.

synthetic (VAN'T HOFF), 1909, A., ii, 988; 1911, A., i, 99.

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inhibition and reactivation of, by mercuric chloride (HATA), 1909, A., i, 543.

influence of environment on (PAVY and BYWATERS), 1910, A., ii, 1098.

influence of neutral salts on (STARKENSTEIN), 1910, A., i, 449.

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Enzyme reactions, equilibrium and final condition of (v. EULER), 1907, A., i, 808.

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Enzyme-secretions, estimation of, in the stomach (VOLHARD and STADE), 1903, A., ii, 120.

Enzymic activity and the effects of immune substances and complements, analogies between (MOORE and WHITLEY), 1909, A., i, 623.

Enzymic oxidation, formation of melanins by (AGULHON), 1910, A., i, 449.

Enzymic processes, measurement and meaning of the concentration of the hydrogen ions in (SØRENSEN), 1909, A., i, 861; 1910, A., i, 147.

Enzymic processes, action of poisons on (SANTESSON), 1908, A., ii, 1061; 1910, A., ii, 331.

Eosin (tetrabromofluorescein), action of, on oxidisable substances (STRAUB), 1904, A., i, 896.

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Eosin, hydroxy- (FRIEDL, WEIZMANN, and WYLER), 1907, T., 1586.

4-Eosinamino-3:3'-dimethyldiphenyl-4'-phthalamic acid (CAIN and BRADY), 1912, T., 2309.

Ephedrine (RABE), 1911, A., i, 396; (SCHMIDT), 1911, A., i, 562; (SCHMIDT and CALLIESS), 1911, A., i, 742.

and its salts and derivatives (MILLER), 1903, A., i, 110.

synthesis of (SCHMIDT and FLAECHER), 1905, A., i, 370.

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and ψ -Ephedrine (SCHMIDT), 1908, A., i, 452; 1909, A., i, 322; (EMDE), 1909, A., i, 177; (GADAMER), 1909, A., i, 49.

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ψ -Ephedrine (RABE), 1911, A., i, 396; (SCHMIDT and CALLIESS), 1911, A., i, 742.

Ephedrine, synthetic (FOURNEAU), 1905, A., i, 57; 1907, A., i, 762.

Ephedryl- and ψ -Ephedryl-phenylthiocarbamides (GADAMER), 1909, A., i, 50.

Epibehenolhydrin (QUENSELL), 1909, A., i, 549.

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Epibromohydrin, action of hydrogen cyanide on (LESPIEAU), 1905, A., i, 406.

Epicamphor and its derivatives (LANKSHEAR and PERKIN), 1911, P., 166.

Epicamphor, amino-, and bromo- (BREDT and PERKIN), 1912, P., 57.

α - and β -isonitroso-, and their derivatives (FORSTER and SPINNER), 1912, T., 1348; P., 47.

Epicamphorcarboxylic acid, and bromo- (BREDT and PERKIN), 1912, P., 57.

Epichlorohydrin, preparation of (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 155; (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), 1912, T., 744.

optical behaviour of (POSNER and ROHDE) 1909, A., i, 766.

action of, on the sodium derivative of acetone dicarboxylic esters (HALLER and MARCH), 1903, A., i, 318, 714.

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cyanate, derivatives of (PATERNO and CINGOLANI), 1908, A., i, 308.

Epidermis, uptake of water and salt by the (FIEHNE and BIBERFELD), 1904, A., ii, 575.

human, cholesterol esters in the (SALKOWSKI), 1910, A., ii, 142.

Epididymis, neutralisation of spermotoxins and alkaloids by extracts of (METALNIKOFF), 1911, A., i, 217.

Epidihydrodicamphenepyrazine and its salts (FORSTER and SPINNER), 1912, T., 1357.

Epidote (*bucklandite*) from Aosta Valley, Piedmont (MILLOSEVICH), 1912, A., ii, 569.

from near Chiavrie, Condove, in the Valley of Susa (ZAMBONINI), 1906, A., ii, 774.

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- Epiethylin**, action of hydrogen cyanide on (LESPIEAU), 1905, A., i, 255, 406.
- Epilepsy**, choline in the cerebrospinal fluid in (DONATH), 1904, A., ii, 63; (MANSFELD), 1904, A., ii, 623.
blood changes in (PUGH), 1903, A., ii, 307.
- Epileptic fits**, abnormal constituents of the urine in (INOUE and SAIKI), 1903, A., ii, 317.
- Epileptics**, is choline present in the cerebro-spinal fluid of (KAJIURA), 1909, A., ii, 71.
- Epimerism** (VOTOČEK), 1911, A., i, 179.
- Epinephrine**. See Adrenaline.
- Episaccharic acid** from the nucleic acid of thymus and its quinine salt (STEUDEL), 1907, A., i, 739, 1097.
- Epi-stearolhydrin** (QUENSELL), 1909, A., i, 549.
- Epithelium**, ciliated, action of various monhydric alcohols on (BREYER), 1904, A., ii, 65.
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- Epsomite**, higher temperature limit of formation of (VAN'T HOFF and MEYER-HOFFER), 1903, A., ii, 555.
- Equation**, Van der Waals', verification of (VAN LAAR), 1905, A., ii, 148.
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- Equation of condition**, the variability of the quantity b of the (VAN DER WAALS), 1903, A., ii, 412.
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- Equation of fluids**, numerical studies on the, and determination of the constants a and b (FRIDERICH), 1906, A., ii, 427.
- Equation of state**, general (DRUCKER), 1910, A., ii, 110.
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- Equations** of Clausius and van der Waals for the mean length of path and number of collisions (KÖHN-STAMM), 1904, A., ii, 473.
- Equilibria**, researches on (BRINER), 1906, A., ii, 657.
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- Equilibria** in the systems: $\text{TiNO}_3 - \text{KNO}_3$, $\text{TiNO}_3 - \text{AgNO}_3$, and $\text{TiNO}_3 - \text{NaNO}_3$ (VAN EYK), 1905, A., ii, 444.
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- hydrocarbon, calculation of (v. WARTENBERG), 1908, A., ii, 26, 676.
- in solutions (DUBRISAY), 1912, A., ii, 32, 339.
- determination and calculation of, for highly dissociated acids (ROTHMUND and DRUCKER), 1904, A., ii, 231; (DRUCKER), 1904, A., ii, 809.
- photo- and electro-chemical (SMITS), 1910, A., ii, 24.
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- $6\text{H}^+ + 5\text{I}' + \text{IO}_3' \rightleftharpoons 3\text{I}_2 + 3\text{H}_2\text{O}$ and $6\text{H}^+ + 5\text{Br}' + \text{BrO}_3' \rightleftharpoons 3\text{Br}_2 + 3\text{H}_2\text{O}$ (SAMMET), 1906, A., ii, 153.
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- Equilibrium** (PISSARJEWSKY), 1904, A., ii, 243.
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- principle of (MARKOWNIKOFF), 1903, A., ii, 200.
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- Equilibrium**, thermodynamic potential and its application to problems of (VAN LAAR), 1905, A., ii, 683.
- determination of, from explosion processes (FINCKH; NERNST), 1905, A., ii, 444.
- theoretical consideration of reactions which take place in two or more successive stages (JUNGIUS), 1904, A., ii, 716.
- in reversible reactions (MICHAEL and LEUPOLD), 1911, A., i, 250.
- phenomena observed when the plait curve meets the solubility curve (SMITS), 1905, A., ii, 684.
- of a system under influence of an external agent (VOLCHONSKY), 1912, A., ii, 441.
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- of physico-chemical systems, static character of the (GORBOFF), 1906, A., ii, 339.
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- the (T, x), of solid and fluid phases for variable values of the pressure (VAN DER WAALS), 1905, A., ii, 683.
- contribution to the knowledge of the px - and pT -lines for the case that two substances enter into a combination which is dissociated in the liquid and the gas phase (SMITS), 1905, A., ii, 683.
- shape of the plait point curve for mixtures of normal substances (VAN LAAR), 1905, A., ii, 507.
- the shape of the spinodal and plait-point curves for binary mixtures of normal substances (VAN LAAR), 1907, A., ii, 16.
- fundamental functions of one-component ideal-constituent gases (BELL and TREVOR), 1905, A., ii, 374.
- derivation of the formula which gives the relation between the concentration of coexisting phases for binary mixtures (VAN DER WAALS), 1904, A., ii, 807.
- the ψ -surface in the neighbourhood of a binary mixture, which behaves as a pure substance (VERSCHAFFELT), 1904, A., ii, 385.
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equation of an ideal eutectic curve in a ternary system and the use of this equation in calculating the transition temperature of two isomerides in presence of solution (VAN LAAR), 1906, A., ii, 270.

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- Etherification** with the hydracids (VILLIERS), 1903, A., i, 598.
 of hydroxyazo-compounds by means of methyl sulphate (COLOMBANO), 1907, A., i, 1091.
- Ether-oxides**, complex (SOMMELET), 1907, A., i, 107.
- Ether-thiocarbamides** and their relation to ψ -ammonium bases (JOHNSON and GUEST), 1910, A., i, 729.
- Ethinidipthalide**. See Bisdiketohydrindene.
- Etholides**. See Waxes of the Coniferæ.
- o*-Ethopropenylphenol** and its acyl derivatives and ethers (MOUNIÉ), 1903, A., i, 483.
- Ethotolusafrane hydrochloride** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 225.
- Ethoxalyl-**. See Ethyloxalyl-.
- Ethoxide**, barium (CHABLAY), 1912, A., i, 3.
 calcium (DOBY), 1903, A., i, 546;
 (DE FORCRAND), 1912, A., i, 67, 743.
 and condensations by (PERKIN and PRATT), 1909, T., 161; P., 18.
 ferric (NICOLARDOT), 1905, A., i, 316.
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 sodium, reactions of (EHSNER DE CONINCK and CHAUVENET), 1907, A., i, 377.
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- Ethoxides**, action of *m*-nitrobenzylidene chloride on solutions of (KLIEGL), 1912, A., i, 268.
- Ethoxyacetaldehyde** and its condensation product with formaldehyde (KLÜGER), 1905, A., i, 683.
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 condensation of, with acetaldehyde (EISSLER and POLLAK), 1907, A., i, 183.
- Ethoxyacetaldehydesemicarbazone** (LEUCHS and GEIGER), 1906, A., i, 807.
- Ethoxyacetamidophosphoric acid**, dibromo-, diethyl and dimethyl esters (STEINKOPF, BOHRMANN, GRÜNUPP, KIRCHHOFF, JÜRGENS, and BENEDEK), 1910, A., i, 308.
- Ethoxyacetic acid** and its amide and thioamide (SOMMELET), 1907, A., i, 21.
 menthol derivative of (EINHORN), 1911, A., i, 137.
 esters, and anhydride (SOMMELET), 1907, A., i, 107.
- Ethoxyacetic acid**, chloro-, ethyl ester, formation of (BLAISE and PICARD), 1911, A., i, 349.
- γ -Ethoxyacetoacetic acid**, ethyl ester, and its copper salt (SOMMELET), 1912, A., i, 334.
- Ethoxyacetonesemicarbazone** (SOMMELET), 1907, A., i, 107.
- Ethoxyacetone nitrile**, preparation of (SOMMELET), 1907, A., i, 21.
- ω -Ethoxyacetophenone oxime** and semicarbazone (SOMMELET), 1907, A., i, 107.
- Ethoxyacetopiperidide** (BRUNO and MYLO), 1912, A., i, 162.
- o*-Ethoxyacetoxybenzoic acid** (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 486.
- Ethoxyacetylacetoacetic acid**, ethyl ester (WEIZMANN, DAVIES, and STEPHEN), 1912, P., 103.
- Ethoxyacetylacetone** and its methyl and ethyl derivatives (SOMMELET), 1907, A., i, 107.
- 2-Ethoxyacetylacetophenone** (PISTERMANN and TAMBOR), 1912, A., i, 486.
- Ethoxyacetylmaleic acid**, ethyl ester (WEIZMANN, DAVIES, and STEPHEN), 1912, P., 103.
- 5-Ethoxy-2-acetylphenyl mercaptan** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 240.
- Ethoxyacetylphosphamic acid**, dibromo-, ethyl ester (STEINKOPF and GRÜNUPP), 1908, A., i, 962.

- β -Ethoxyacraldehyde acetal** (CLAISEN), 1904, A., i, 14.
- α -Ethoxyacrylic acid, β -hydroxy-, ethyl ester** (JOHNSON and MCCOLLUM), 1906, A., i, 704.
- β -Ethoxyacrylic acid and its ethyl ester** (TSCHITSCHIBABIN), 1906, A., i, 398.
- β -Ethoxy- α -alanine and its copper salt** (LEUCHS and GEIGER), 1906, A., i, 806.
- 5-Ethoxy-2-aldehydophenoxyacetic acid and its ethyl ester** (DUMONT and v. KOSTANECKI), 1909, A., i, 320.
- β -Ethoxy- β -alkylacrylonitriles, synthesis of** (MOUREU and LAZENNEC), 1906, A., i, 241.
- 5-Ethoxy-1-*p*-aminophenyl-3:4-dimethylpyrazole and its acetyl derivative** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 136.
- 9-Ethoxy-9-isoamyl-10-anthrone** (JÜNGERMANN), 1905, A., i, 795.
- 2-*p*-Ethoxyanilinopyridine.** See 2-*p*-Phenetidinopyridine.
- 4-Ethoxyanthranilic acid and its acetyl derivative** (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 319.
- 5-Ethoxyanthranilic acid** (LESSER), 1911, A., i, 456.
- 3-Ethoxyazobenzene.** See Benzeneazophenetole.
- 4-Ethoxyazoxybenzene, 3:5-dibromo-** (JACKSON and FISKE), 1903, A., i, 689.
- 2-Ethoxybenzaldehyde and nitro-, and their derivatives** (GATTERMANN), 1912, A., i, 984.
- 2-Ethoxybenzaldehyde, 5-nitro-** (CLAYTON), 1910, T., 2109.
- 3-Ethoxybenzaldehyde, condensation of, with isobutaldehyde** (SUBAK), 1903, A., i, 493.
- 4-Ethoxybenzaldehyde and its azine, oxime, and condensation product with benzidine, and 2- and β -bromo-, 2-chloro-, and β -hydroxy- and their derivatives** (GATTERMANN), 1908, A., i, 31.
- m*-Ethoxybenzamide and its *N*-mono- and -di-methyl derivatives** (FRITSCH), 1904, A., i, 58.
- Ethoxybenzene.** See Phenetole.
- Ethoxybenzeneazo-.** See Phenetoleazo-.
- Ethoxybenzofurazan.** See Ethoxybenziso-oxadiazole.
- o*-Ethoxybenzhydrol** (GATTERMANN), 1912, A., i, 985.
- Ethoxybenzidine and its *N*-bisbenzylidene derivatives** (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 202.
- diazonium salt of, action of heat on** (CAIN), 1904, P., 249.
- Ethoxybenziminazolone, diacetyl derivative** (ELBS, METTE, and SCHUSTER), 1911, A., i, 193.
- o*-Ethoxybenzoic acid, methyl ester, action of methylamine on** (NICOLA), 1907, A., i, 853.
- o*-Ethoxybenzoic acid, 3:5-dinitro-** (ULLMANN and ENGI), 1909, A., i, 474.
- m*-Ethoxybenzoic acid, amide, methylamide, and dimethylamide, action of, on tetramethyldiaminobenzhydrol** (FRITSCH), 1904, A., i, 58.
- p*-Ethoxybenzoic acid** (BODROUX), 1903, A., i, 344.
- p*-Ethoxybenzoic acid, *m*-amino-, urethane of** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1908, A., i, 339.
- β -bromo-** (GATTERMANN), 1903, A., i, 32.
- o*- and *p*-Ethoxybenzoic acids, bromo-** (CHEMISCHE FABRIK VON HEYDEN), 1910, A., i, 37.
- o*-, *m*- and *p*-Ethoxybenzoic acids, methyl esters of** (COHEN and DUDLEY), 1910, T., 1741.
- Ethoxybenzonitrile, chloronitro-, van Heteren's, constitution of** (BLANKSMA), 1903, A., i, 342.
- 6-Ethoxybenzonitrile, 3-chloro-2:5-dinitro-, and 3-chloro-5-nitro-2-amino** (BLANKSMA), 1903, A., i, 342.
- 2'-Ethoxybenzophenone, 5:5'-dibromo-2-hydroxy-, and its acetyl derivative, phenylhydrazone, and oxime** (DIELS and ROSENMUND), 1906, A., i, 673.
- 4-Ethoxybenzophenone, β -mono-, β -3-di- and β -3-tri-bromo, and 3-chloro- β -bromo-** (v. KOSTANECKI, LAMPE, and MARSCHALK), 1907, A., i, 950.
- 4'-nitro-** (AUWERS), 1904, A., i, 67.
- Ethoxy-*o*-benzoquinonedioxime, chloro-** (GREEN and ROWE), 1912, T., 2458.
- 2-Ethoxy-*p*-benzoquinone-*p*-tolylimine** (JACOBSON and HUBER), 1909, A., i, 853.
- 5-Ethoxybenziso-oxadiazole (ethoxybenzofurazan), 6-chloro-, and its oxide** (GREEN and ROWE), 1912, T., 2458.
- p*-Ethoxybenzoyl cyanide** VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), 1911, A., i, 866.
- 4'-Ethoxy-2-benzoylbenzoic acid, 2'-hydroxy-, and its ethyl ester** (TAMBOUR and SCHÜRCH), 1910, A., i, 559.
- o*-Ethoxybenzyl chloride** (PSCHORR and ZEIDLER), 1910, A., i, 425.
- γ -Ethoxy- α -benzylacetoacetic acid, ethyl ester** (SOMMELET), 1912, A., i, 334.

- 1-Ethoxybenzylamine, 4-amino-, and its acyl derivatives (EINHORN and MAUERMAYER), 1906, A., i, 251.
- 2-Ethoxy-5-benzylbarbituric acid (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 1025.
- Ethoxybenzylideneacetophenone. See Phenyl ethoxystyryl ketone.
- p*-Ethoxybenzylideneamino- α -alkylcinamic acids, esters, and their liquid crystals (VORLÄNDER and KASTEN), 1908, A., i, 641.
- Ethoxybenzylmalonic acid, ethyl ester, action of, on ethyl sodiomalonate, (STAUDINGER), 1905, A., i, 736.
- 1- α -Ethoxybenzyl-2-naphthol-3-carboxylic acid, methyl ester of (FRIEDL), 1910, A., i, 742.
- α -Ethoxybenzylnitroacetophenone (WIRLAND), 1903, A., i, 768.
- 6-Ethoxy-3-benzyl- α -pyrone-5-carboxylic acid, ethyl ester (THOLE and THORPE), 1911, T., 2201.
- 5-Ethoxy-1- and -3-benzyluracils (JOHNSON and JONES), 1909, A., i, 60.
- Ethoxy-bromo- and -chloro-acetic acid, ethyl esters (MYLO), 1912, A., i, 4.
- Ethoxybromomethylthiazoline (GABRIEL and COLMAN), 1906, A., i, 889.
- γ -Ethoxybutaldehyde, β -hydroxy- (EISSLER and POLLAK), 1907, A., i, 183.
- β -Ethoxybutane, α -chloro- (*ethylene glycol chlorohydrin ether*) (HOUBEN and FÜHRER), 1908, A., i, 73.
- δ -Ethoxybutane, α -chloro- β -hydroxy-, and $\alpha\beta$ -dihydroxy- (PARISELLE), 1910, A., i, 353.
- α -Ethoxybutane- $\beta\delta$ -dione- δ -carboxylic acid, ethyl ester, and its salts (PERATONER), 1912, A., i, 291.
- α -Ethoxybutanone and its semicarbazone (SOMMELET), 1907, A., i, 107.
- β -Ethoxybutan- γ -one (GAUTHIER), 1909, A., i, 354.
- δ -Ethoxybutylamine (HENRY), 1907, A., i, 898.
- δ -Ethoxybutylene $\alpha\gamma$ -glycol (*butylglycerol monoethyl ether*) (EISSLER and POLLAK), 1907, A., i, 183.
- 4-Ethoxy-1-isobutylphthalazine (WÖLBING), 1906, A., i, 48.
- γ -Ethoxybutyric acid, β -chloro-, and its amide, and β -hydroxy-, and its ethyl ester (LESPIEAU), 1905, A., i, 256.
- β -hydroxy-, and its calcium salt (EISSLER and POLLAK), 1907, A., i, 183.
- α -Ethoxyisobutyric acid (BLAISE and PICARD), 1911, A., i, 260.
- and its salts and derivatives (BLAISE and PICARD), 1912, A., i, 603.
- Ethoxy- β -campholytic acid (PERKIN), 1903, T., 861.
- 6-(or 7)-Ethoxyisocarbostryl-3-carboxylic acid, 4-hydroxy-, ethyl ester (KUSEL), 1904, A., i, 619.
- Ethoxycaryophyllene, nitroso- (DEUSSEN and PHILIPP), 1910, A., i, 575.
- Ethoxychloroacetyl chloride (FOSTER), 1909, A., i, 356.
- β -Ethoxy- $\alpha\alpha$ -dichloropropylene (VIKTORIA), 1905, A., i, 110.
- α - and β -o-Ethoxycinnamamide (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 296.
- Ethoxycinnamic acid, ethylene chlorhydrin ester (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 858.
- b*-o-Ethoxycinnamic acid, methyl ester (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), 1911, A., i, 297.
- Ethoxycoumalindicarboxylic acid, ethyl ester, and ammonia or alkylamines, constitution of imino-compounds from (GUTHZEIT and EYSSEN), 1909, A., i, 674.
- 2-Ethoxy-4-coumarilic acid and its ethyl ester (AUWERS), 1912, A., i, 1010.
- 4-Ethoxycoumarin (ANSCHÜTZ, ANSPACH, FRESENIUS, and CLAUS), 1909, A., i, 662.
- 4-Ethoxycoumarin-3-carboxylic acid, and its ethyl ester (ANSCHÜTZ, ANSPACH, FRESENIUS, and CLAUS), 1909, A., i, 661.
- 2-Ethoxycoumarone (AUWERS), 1912, A., i, 1009.
- 5-Ethoxycoumarone (DUMONT and v. KOSTANECKI), 1909, A., i, 320.
- 5-Ethoxy-*o*-cresol (BAMBERGER and BLANGEY), 1912, A., i, 692.
- γ -Ethoxycrotonaldehyde (EISSLER and POLLAK), 1907, A., i, 183.
- β -Ethoxycrotonic acid (FEIST), 1906, A., i, 332.
- ethyl ester, and its reduction (BOUVEAULT and BLANC), 1905, A., i, 12.
- β -Ethoxycrotonic acid, γ -chloro- α -cyano-, ethyl ester (BENARY), 1908, A., i, 600.
- γ -Ethoxycrotonic acid and its ethyl ester, and nitrile (LESPIEAU), 1905, A., i, 319, 406.
- 5-Ethoxycytosine and 5-Ethoxyisocytosine (JOHNSON and MCCOLLUM), 1906, A., i, 705.
- Ethoxy-10-diazophenanthrene sulphates, 2- and 3-, sodium derivatives of (HENSTOCK), 1906, T., 1529; P., 236.
- γ -Ethoxy- $\alpha\alpha$ -dibenzylacetoacetic acid, ethyl ester (SOMMELET), 1912, A., i, 334.

- 5-Ethoxy-4:5-di-*p*-bromophenylisoglyoxalone (BILTZ and RIMPEL), 1909, A., i, 743.
- α -Ethoxydihydroisosafole, bromo-derivatives (HOERING), 1905, A., i, 903.
- γ -Ethoxy- $\alpha\alpha$ -dimethylacetoacetic acid, ethyl ester, and its derivatives (SOMMELET), 1911, A., i, 109.
- Ethoxydimethylaminophenyl sulphide, ammonium sulphonate of (PRESCOTT and SMILES), 1911, T., 646.
- 4-Ethoxy-2:6- and -3:5-dimethylbenzaldehydes (GATTERMANN), 1908, A., i, 38.
- α -Ethoxy- $\beta\beta$ -dimethylbutyric acid and its calcium salt (EGOROVA), 1910, A., i, 91.
- 5-Ethoxy-4:5-dimethyldihydrouracil, 4-bromo- (KIRCHER), 1912, A., i, 54.
- 5-Ethoxy-2:3'-dimethyldiphenyl, 4:6'-diamino-, and bisazo-compound from (JACOBSON and JANKOWSKI), 1909, A., i, 853.
- 5-Ethoxy-1:1-dimethylcyclohexan-3-ol and its acetyl and benzoyl derivatives (CROSSLEY and RENOUEF), 1906, P., 302; 1907, T., 74.
and the action of hydrogen bromide on (CROSSLEY and RENOUEF), 1908, T., 642.
- 3-Ethoxy-1:1-dimethyl- Δ^3 -cyclohexenylidene-5-acetonitrile (CROSSLEY and GILLING), 1910, T., 531.
- 3-Ethoxy-1:1-dimethyl- Δ^3 -cyclohexenylidene-5-cyanoacetic acid and its isomeric ethyl esters (CROSSLEY and GILLING), 1910, T., 529.
- 3-Ethoxy-1:1-dimethyl- Δ^3 -cyclohexenylidene-5-propionitrile (CROSSLEY and GILLING), 1910, T., 534.
- 5-Ethoxy-1:3-dimethylhydantoinmethylamide (BILTZ), 1910, A., i, 523.
- 4-Ethoxy-2:5-dimethyl-6-piperidone-3-carboxylic acid, 5-cyano-2-hydroxy-, ethyl ester (ERRERA and LABATE), 1904, A., i, 190.
- β -Ethoxy- $\alpha\alpha$ -dimethylpropionic acid and its esters (MARCILLY), 1904, A., i, 219.
- 5-Ethoxy-3:4-dimethylpyrazole and nitroso- (WOLFF), 1904, A., i, 722.
- Ethoxydicyclopentadiene, compound of, with platinum chloride (HOFMANN and v. NARBUTT), 1908, A., i, 520.
- Ethoxydicyclopentadiene, oximino- (RULE), 1908, T., 1841; P., 235.
- 3-Ethoxydiphenyl (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 203; (JACOBSON and LOEB), 1904, A., i, 204.
- α -Ethoxydiphenylacetanilide (KLINGER), 1912, A., i, 557.
- 2-Ethoxydiphenylamine, dichloro-2':4'-dinitro- (REVERDIN and CRÉPIEU), 1903, A., i, 858.
- 3-Ethoxydiphenylamine, 2:6-dinitro- (BLANKSMA), 1908, A., i, 158.
- Ethoxydiphenylamines, 5- and 4'-, bromoamino-derivatives of, and their salts (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 122.
- 4'-Ethoxydiphenylamine-2-carboxylic acid (ULLMANN and KIPPER), 1907, A., i, 845.
- 4-Ethoxy-3:4-diphenyl-5-benzylidene-2-methyl- Δ^2 -cyclopentenone (GRAY), 1909, T., 2135.
- α -Ethoxy- $\alpha\gamma$ -diphenylbutane, $\beta\beta$ -dinitro- (MEISENHEIMER and HEIM), 1905, A., i, 269.
- 3-Ethoxydiphenyldiazonium salts, 4'-hydroxy- (CAIN), 1904, P., 249; 1905, T., 7.
- 10-Ethoxy-9:9-diphenyldihydroanthracene (LIEBERMANN and LINDENBAUM), 1905, A., i, 523.
- α -Ethoxydiphenyleneacetanilide (KLINGER), 1912, A., i, 558.
- Ethoxydiphenylenebisphenylthiocarbamide (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 203.
- α -Ethoxy- $\alpha\beta$ -diphenylethane, β -nitro- (MEISENHEIMER and HEIM), 1907, A., i, 860.
- β -Ethoxy- $\beta\beta$ -diphenylethane, α -amino- and α -nitro- (KONOWALOFF and JATZEWITSCH), 1905, A., i, 764.
- Ethoxydiphenylethylalcohol (REYNOLDS), 1910, A., i, 858.
- 5-Ethoxy-4:5-diphenyl-1-ethylisoglyoxalone (BILTZ and KOSEGARTEN), 1909, A., i, 744.
- 5-Ethoxy-4:5-diphenylisoglyoxalone and its acetate, and 3:4-dichloro- (BILTZ and RIMPEL), 1909, A., i, 742.
- δ -Ethoxy- $\alpha\gamma$ -diphenyl- δ -*p*-methoxyphenyl- and - δ -*mp*-methylenedioxyphenyl- β -butanones (HERTZKA), 1905, A., i, 291.
- 5-Ethoxy-4:5-diphenyl-1-methylisoglyoxalone (BILTZ and RIMPEL), 1909, A., i, 743.
- 4-Ethoxy-3:4-diphenyl-2-methyl- Δ^2 -cyclopentenone (GRAY), 1909, T., 2134.
- 3-Ethoxydiphenyl-2-methyl-4-quinazolinone, 4'-amino-, and 4'-amino-7-acetyl-amino- (BOGERT, GORTNER, and AMEND), 1911, A., i, 581.
- p*-Ethoxydiphenylphthalide (MEYER and FISCHER), 1911, A., i, 723.
- α -Ethoxy- $\alpha\alpha$ -diphenylpropane, β -nitro- (KONOWALOFF and DOBROWOLSKY), 1905, A., i, 764.

- 2'-Ethoxydiphenylsulphone disulphide (FRIES and VOGT), 1911, A., i, 556.
- 2'-Ethoxydiphenylsulphone-2-sulphinic acid, and its sodium salt (FRIES and VOGT), 1911, A., i, 556.
- 2'-Ethoxydiphenylsulphone-2-sulphonic acid and its anilide, bromides, and chloride (FRIES and VOGT), 1911, A., i, 556, 557.
- 5-Ethoxy-1:3-diphenyltriazole (WHEELER and STATIROPOULOS), 1905, A., i, 722.
- 3-Ethoxy-1:4-diphenylurazole and 5-thio- (WHEELER and STATIROPOULOS), 1905, A., i, 720.
- γ -Ethoxy- α -ethylacetoacetic acid, ethyl ester, and its pyrazolone derivative (SOMMELET), 1911, A., i, 109.
- 2-Ethoxy-5-ethylbarbituric acid (FARBENFABRIKEN VORM. F. BAYER & CO.), 1912, A., i, 1025.
- α -Ethoxyethylbenzene, β -chloro- (HOUBEN and FÜHRER), 1908, A., i, 74.
- α -Ethoxy- α -ethylbutyric acid (BLAISE and PICARD), 1911, A., i, 260.
and its salts and ethyl ester (BLAISE and PICARD), 1912, A., i, 603.
- 5-Ethoxy-2-ethylcoumarone (v. KOSTANECKI and TAMBOUR), 1909, A., i, 320.
- 1- α -Ethoxyethylnaphthalene, β -chloro- (HOUBEN and FÜHRER), 1908, A., i, 74.
- 4-Ethoxy-1-ethylphthalazone (DAUBE), 1905, A., i, 210.
- 4-Ethoxy-2-ethylquinazoline, 5-nitro- (BOGERT and SEIL), 1907, A., i, 561.
- 6-Ethoxy-1-ethylquinolone and 5-bromo- (HOWITZ and BÄRLOCHER), 1903, A., i, 279.
- 6-Ethoxy-1-ethylquinolone, 5-chloro- (HOWITZ and WITTE), 1905, A., i, 470.
- Ethoxyethylsuccinic acid and its ethyl ester and salts (FITTIG and SCHEEN), 1904, A., i, 418.
- Ethoxyethyltheophylline (SCHWABE), 1908, A., i, 45.
- 1- β -Ethoxyethylthiolanthraquinone (GATTERMANN), 1912, A., i, 1003.
- 5-Ethoxy-2-ethylthiol-1- and -3-benzyl-dihydro-6-pyrimidones (JOHNSON and JONES), 1909, A., i, 60.
- 5-Ethoxy-2-ethylthiol-1- and -3-methyl-dihydro-6-pyrimidones and their compounds with potassium iodide (JOHNSON and JONES), 1909, A., i, 423.
- 6-Ethoxy-2-ethylthiol-4-methylpyrimidine (JOHNS), 1908, A., i, 917.
- Ethoxyethylthiolphenyl-1:3:5-triazine (JOHNSON and MENGE), 1904, A., i, 949.
- 5-Ethoxy-2-ethylthiolpyrimidine, 6-amine derivatives, and their hydrochlorides (JOHNSON and MCCOLLUM), 1906, A., i, 770.
- 6-amino- and 6-chloro- (JOHNSON and MCCOLLUM), 1906, A., i, 704.
- 6-thio-, 6-thiocyano-, 6-thiocarb-amido-derivatives, 6-thiocarbimido-, and 6-thiocarbamate-derivatives (JOHNSON and MCCOLLUM), 1906, A., i, 768, 769, 770.
- 6-Ethoxy-2-ethylthiolpyrimidine (WHEELER and JOHNSON), 1904, A., i, 625.
- 6-Ethoxy-2-ethylthiolpyrimidine-5-carboxylamide (WHEELER and JOHNS), 1908, A., i, 839.
- 5-Ethoxy-2-ethylthiolpyrimidine-6-iminothiocarbonic acid, ethyl ester (JOHNSON and MCCOLLUM), 1906, A., i, 769.
- 6-Ethoxyflavanone and its compounds with aldehydes (KATSCHALOWSKY and v. KOSTANECKI), 1904, A., i, 911.
- 6-Ethoxyflavonol and its acetyl derivative (v. KOSTANECKI and LAMPE), 1904, A., i, 440.
- Ethoxy-groups. See Ethoxyl groups.
- γ -Ethoxyheptane (BLAISE and PICARD), 1911, A., i, 260.
- β -Ethoxyisohexane, iso- α -chloro- (HOUBEN and FÜHRER), 1908, A., i, 74.
- δ -Ethoxy- β -heptanone- ϵ -carboxylamide- γ -carboxylic acid, ϵ -cyano-. See 4-Ethoxy-2-methyl-5-ethyl-6-pyridone-3-carboxylic acid, 5-cyano-2-hydroxy-.
- α -Ethoxyhexane, ζ -bromo- and ζ -iodo- (DIONNEAU), 1906, A., i, 134.
- β -Ethoxyisohexane, chloro- (HOUBEN and FÜHRER), 1908, A., i, 73.
- Ethoxycyclohexane-2:3-diol (BRUNEL), 1910, A., i, 476.
- δ -Ethoxy- β -hexanone- ϵ -carboxylamide- γ -carboxylic acid, ϵ -cyano-. See 4-Ethoxy-2:5-dimethyl-6-piperidone-3-carboxylic acid, 5-cyano-2-hydroxy-.
- 1-Ethoxy- Δ^2 -cyclohexene (CROSSLEY), 1904, T., 1416; P., 160; (BRUNEL), 1905, A., i, 869.
- α -Ethoxyhexoic acid, salts and derivatives of (BLAISE and PICARD), 1912, A., i, 747.
- α -Ethoxyhexoyl chloride (BLAISE and PICARD), 1911, A., i, 260.
- Ethoxyhexylene and its dibromide, (DIONNEAU), 1910, A., i, 354.
- α -Ethoxycyclohexylmalonic acid, ethyl ester (HOPE and PERKIN), 1909, T., 1366.
- o*-Ethoxyhydrazobenzene (JACOBSON, FRANZ, and HÖNIGSBERGER), 1904, A., i, 202.

- m*-Ethoxyhydrazobenzene (JACOBSON and HÖNIGSBERGER), 1904, A., i, 206.
- Ethoxy-*o*-dihydroxycatechol hemiether, hexachloro- and its derivatives (JACKSON and KELLEY), 1912, A., i, 275.
- 4-Ethoxy-1- α -hydroxyethylbenzene and its phenylurethane (KLAGES and EPPELSHEIM), 1904, A., i, 46.
- 2-Ethoxy-1- α -hydroxypropylbenzene and its phenylurethane (KLAGES), 1904, A., i, 1001.
- 2-Ethoxyindene, 3-cyano-, formation of (MOORE and THORPE), 1908, T., 177; P., 13.
- Ethoxyketo-. See Ketoethoxy-.
- Ethoxyl, simplification of Zeisel's method of estimating (PERKIN), 1903, T., 1367; P., 239.
- Ethoxyl groups, replacement of, by alkyl radicles (REFORMATSKY), 1906, A., i, 136; (TSCHITSCHIBABIN), 1906, A., i, 397; 1907, A., i, 378.
- 4-Ethoxylactanilide (*lactophenin*), 2-nitro-, and 2:6-dinitro-, and nitrate of the latter (ELBS and METTE), 1911, A., i, 192.
- β -Ethoxylamino- β -phenylpropionic acid (POSNER), 1906, A., i, 955.
- β -Ethoxylamino- β -*p*-tolylpropionic acid (POSNER and OPPERMAN), 1907, A., i, 56.
- o*-Ethoxyleucomalachite-green (VOTOČEK and JELINEK), 1907, A., i, 245.
- Ethoxyleucomalachite-greens (VOTOČEK and KRAUZ), 1909, A., i, 519.
- β -Ethoxymellilotic acid (BIILMANN and HOFF), 1912, A., i, 462.
- γ -Ethoxy- α -methylacetoacetic acid, ethyl ester, and its pyrazolone derivative (SOMMELET), 1911, A., i, 109.
- 8-Ethoxy- α -methylacrylic acid and its salts, ethyl ester, and compound with bromine (TSCHITSCHIBABIN), 1906, A., i, 398; (EMMERLING and KRISTELLER), 1906, A., i, 623, 929.
- α -Ethoxy- β -methylalkyl- β -ols (SOMMELET), 1907, A., i, 108.
- 5-Ethoxy-1-*p*-methylaminophenyl-3:4-dimethylpyrazole and its nitroso-derivative (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 136.
- d*-2-Ethoxy-1- γ -methylamylbenzene (KLAGES and SAUTTER), 1905, A., i, 580.
- ϵ -Ethoxy- β -methyl- $\Delta\beta$ -amylen (KJERNER and KLAUWIKORDOFF), 1911, A., i, 636.
- 3-Ethoxymethylaniline, 2:6-dinitro- (BLANKSMA), 1908, A., i, 158.
- β -Ethoxy-3-methyl- α -bromomethylstyrene, β -5-dibromo-6-hydroxy- (FRIES and MOSKOPF), 1910, A., i, 334.
- Ethoxymethyl *n*-butyl ketone and its derivatives (BLAISE and PICARD), 1912, A., i, 232.
- 6-(or 7)-Ethoxy-3-methylisocarbostyryl, 4-hydroxy- (KUSEL), 1904, A., i, 619.
- p*-Ethoxy- β -methylcinnamic acid (SCHROETER and BUCKHOLZ), 1908, A., i, 170.
- 4-Ethoxymethylcoumarilic acid (STOERMER and OETKER), 1904, A., i, 245.
- 2-Ethoxy-4-methylcoumarilic acid, ethyl ester (AUWERS), 1912, A., i, 1010.
- 4-Ethoxy-7-methylcoumarin-3-carboxylic acid, ethyl ester (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 663.
- 4-Ethoxy-2-methylcoumarone (v. GRAFFENRIED and v. KOSTANECKI), 1910, A., i, 631.
- 5-Ethoxy-2-methylcoumarone (v. KOSTANECKI and TAMBOR), 1909, A., i, 320.
- 2-Ethoxy-4-methylcoumarone (AUWERS), 1912, A., i, 1010.
- α -Ethoxy- β -methyldecane, β -hydroxy- (BÉHAL and SOMMELET), 1907, A., i, 460.
- 3'-Ethoxy-3-methyldiphenyl, 4':6-di-amino-, and its dibenzoyl and di-*p*-nitrobenzylidene derivatives (JACOBSON and HUBER), 1909, A., i, 853.
- 5-Ethoxy-2'-methyldiphenylamine, 2-amino- (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 122.
- 2'-Ethoxy-3-methyldiphenylamine, 6-amino-, and stilbazonium base from, and benzil (JACOBSON and HUBER), 1909, A., i, 853.
- 3'-Ethoxy-4-methyldiphenylamine, 4'-amino-, and its hydrochloride, and acetyl and salicylidene derivatives (JACOBSON and HUBER), 1909, A., i, 852.
- α -Ethoxy- β -methyl-dodecane, β -hydroxy- (BÉHAL and SOMMELET), 1907, A., i, 460.
- Ethoxymethylenacetoacetic acid, ethyl ester, action of, on alkylcyanoacetamides (ERRERA and LABATE), 1904, A., i, 189.
- β -Ethoxymethylenepyrotartaric acid (FICHTER and RUDIN), 1904, A., i, 473.
- α -Ethoxy- δ -methyl- β -ethylpentan- β -ol (SOMMELET), 1907, A., i, 108.
- 4-Ethoxy-2-methyl-5-ethyl-6-pyridone-3-carboxylic acid, 5-cyano-2-hydroxy-, ethyl ester (ERRERA and LABATE), 1904, A., i, 190.

- ω -Ethoxymethylfurfuraldehyde and its phenylhydrazone and *p*-bromophenylhydrazone (COOPER and NUTTALL), 1911, T., 1197; P., 134.
- 4(or 5)-Ethoxymethylglyoxaline and its hydrogen oxalate (PYMAN), 1911, T., 678.
- 2-Ethoxy-1-methylcyclohexane (MURAT), 1909, A., i, 146.
- α -Ethoxy- ϵ -methylhexanone and its semicarbazone (SOMMELET), 1907, A., i, 107.
- Ethoxymethylcyclohexene (ZELINSKY and GORSKY), 1908, A., i, 620.
- 5-Ethoxy-1-methylhydantoinmethylamide (BILTZ and KREBS), 1910, A., i, 524.
- 5-Ethoxy-1-methylindole sodium sulphite (HINSBERG), 1908, A., i, 453.
- 5-Ethoxy-1-methyloxindole and its nitrosoamine (HINSBERG), 1908, A., i, 453.
- α -Ethoxy- δ -methylpentanone and its semicarbazone (SOMMELET), 1907, A., i, 107.
- d-2-Ethoxy-1- γ -methyl- Δ^{α} -pentenylbenzene (KLAGES and SAUTTER), 1905, A., i, 580.
- Ethoxymethylphenylglyoxylic acids, 2:4- and 4:2- (EYKMAN), 1904, A., i, 665.
- Ethoxymethyl isopropyl ketone and its semicarbazone (SOMMELET), 1911, A., i, 109.
- 4-Ethoxy-2-methyl-5-propyl-6-piperidone-3-carboxylic acid, 5-cyano-2-hydroxy-, ethyl ester (ERRERA and LABATE), 1904, A., i, 190.
- 5-Ethoxy-3-methylpyrazole and its isomeric nitroso-derivatives (WOLFF), 1904, A., i, 722.
- 3-Ethoxymethylpyrazolone and its sodium salt (SOMMELET), 1912, A., i, 334.
- 7-Ethoxy-3-methylpyrazoquinazoline (MICHAELIS, KRUG, LEO, and ZIESEL), 1910, A., i, 514.
- 2-Ethoxy-4-methylpyrimidine, 6-hydroxy- (BRUCE), 1904, A., i, 574.
- ω -Ethoxymethylpyromucic acid and its silver salt (COOPER and NUTTALL), 1911, T., 1198.
- 4-Ethoxy-2-methylquinazoline, 5- and 7-nitro- (BOGERT and SEIL), 1907, A., i, 561.
- 4-Ethoxy-2-methylquinoline. See 2-Methylkynurine, *O*-ethyl ether.
- 6-Ethoxy-1-methyl-2-quinolone (DECKER and ENGLER), 1903, A., i, 518.
- 6-Ethoxy-1-methyl-2-quinolone 5-bromo- (HOWITZ and BÄRLOCHER), 1903, A., i, 279.
- 6-Ethoxy-1-methyl-2-quinolone, 5-chloro- (HOWITZ and WITTE), 1905, A., i, 470.
- Ethoxymethylsuccinic acid and its ethyl ester (HOPE), 1912, T., 906.
- 5-Ethoxy-3-methyltetrahydro-6-pyrimidine, 2-thio- (JOHNSON and JONES), 1909, A., i, 423.
- Ethoxymethylthiocarbamide (JOHNSON and GUEST), 1909, A., i, 371.
- 5-Ethoxy-2-methylthiolbenzoic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 797.
- 5-Ethoxy-2-methyl- and -2-ethyl-thiol-dihydro-6-pyrimidones (JOHNSON and MCCOLLUM), 1906, A., i, 704.
- Ethoxymethylthioldiphenylthiodiazoline (BUSCH, KAMPHAUSEN, and SCHNEIDER), 1903, A., i, 531.
- 6-Ethoxy-2-methylthiol-5-methylpyrimidine, 4-chloro- (WHEELER and JAMIESON), 1904, A., i, 942.
- Ethoxymethylthiolphenyl-*p*-tolylthiodiazoline (BUSCH and BLUME), 1903, A., i, 535.
- 5-Ethoxy-2-methylthiopyrimidine, 6-chloro-, and 6-thio- (JOHNSON and GUEST), 1909, A., i, 745.
- α -Ethoxy- β -methylundecane, β -hydroxy- (BÉHAL and SOMMELET), 1907, A., i, 460.
- 2-Ethoxy-1-naphthaldehyde (BARTSCH), 1903, A., i, 649.
- derivatives of (SACHS and BRIGL), 1911, A., i, 719.
- compound of, with ethyl cyanoacetate (HELBRONNER), 1903, A., i, 764.
- Ethoxy-1-naphthaldehydes, 2- and 4-, and their azines (GATTERMANN), 1908, A., i, 33.
- Ethoxynaphthalene. See Naphthylether ether.
- 2-Ethoxy- α -naphthoic acid (BODROUX), 1903, A., i, 420; 1904, A., i, 167.
- 4-Ethoxy- α -naphthol (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 951.
- 2-Ethoxy-1-naphthylhydroxyacetonitrile (SACHS and BRIGL), 1911, A., i, 719.
- 2-Ethoxy- α -naphthylideneacetylacetone (HELBRONNER), 1903, A., i, 764.
- α -2-Ethoxynaphthylidene-*p*-aminophenol (MANCHOT and PALMBERG), 1912, A., i, 350.
- 5-Ethoxy- β -octanone- ϵ -carboxylamide- γ -carboxylic acid, ϵ -cyano-. See 4-Ethoxy-2-methyl-5-propyl-6-piperidone-3-carboxylic acid, 5-cyano-2-hydroxy-.

- β -Ethoxypentane- α - γ -trione- α -dicarboxylic acid**, diethyl ester and its salts (PERATONER), 1912, A., i, 291.
- α -Ethoxypentanone** and its semicarbazone (SOMMELET), 1907, A., i, 107.
- β -Ethoxypentan- γ -one** (GAUTHIER), 1909, A., i, 354.
- Ethoxycyclopentenedione**, tribromo- (JACKSON and FLINT), 1910, A., i, 178.
- 2-Ethoxyperimidine** and its hydrochloride and sulphate (SACHS), 1909, A., i, 431.
- p*-Ethoxyphenacyldialuric acid** (KÜHLING), 1905, A., i, 944.
- p*-Ethoxyphenacyldialuric acid**, bromo-, and its acetyl derivative (KÜHLING and SCHNEIDER), 1909, A., i, 425.
- p*-Ethoxyphenacylisohydantoic acid** (KÜHLING and SCHNEIDER), 1909, A., i, 425.
- p*-Ethoxyphenacyltartronic acid** and its lead salt (KÜHLING and SCHNEIDER), 1909, A., i, 424.
- 3-Ethoxyphenanthraquinonemono-oxime** (HENSTOCK), 1906, T., 1530; P., 236.
- 5-Ethoxyphenol**, 2-amino-, and its derivatives (HENRICH and SCHIERENBERG), 1904, A., i, 1049.
- Ethoxyphenolsulphonic acid** (SCHULTZ), 1906, A., i, 837.
- Ethoxyphenyl**. See also Phenetyl- and Phenylethoxy-.
- Ethoxyphenylaceanthraphenazonium chloride** (LIEBERMANN and ZSUFFA), 1911, A., i, 387.
- Ethoxyphenylacenaphthaphenazonium chloride** (LIEBERMANN and ZSUFFA), 1911, A., i, 387.
- o*-Ethoxyphenylacetic acid** (PSCHORR and ZEIDLER), 1910, A., i, 425.
- o*-Ethoxyphenylacetonitrile** (PSCHORR and ZEIDLER), 1910, A., i, 425.
- α -2'-Ethoxyphenyl-2-amino-3:4-dimethoxycinnamic acid** (PSCHORR & ZEIDLER), 1910, A., i, 425.
- p*-Ethoxyphenylaminomethylsulphurous acid**, preparation of salts of, and its sodium salt (LEPETIT), 1909, A., i, 569.
- p*-Ethoxyphenylaminosuccino-*p*-ethoxyphenylimide** and nitroso- (WARREN and GROSE), 1912, A., i, 961.
- η -Ethoxy- α -phenyl- η -*p*-anisyl- $\Delta^{\alpha\gamma}$ -heptadien- ϵ -one**, ζ -bromo- (BAUER and DIETERLE), 1911, A., i, 881.
- 4-Ethoxyphenylanthranilic acid**. See 4'-Ethoxydiphenylamine-2-carboxylic acid.
- 9-Ethoxy-9-phenyl-10-anthrone** (LIEBERMANN and LINDENBAUM), 1905, A., i, 522.
- 2-Ethoxy-5-phenylbarbituric acid** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 1025.
- 6-Ethoxy-1-phenylbenzimidazole**, *o*- and *m*-bromo-, and the 2-thiol of the *m*-bromo-compound (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 122.
- 2-thiol-, and its acetyl and 4-methyl derivatives and mercury compound (JACOBSON and HUGERSHOFF), 1904, A., i, 106.
- 5-Ethoxy-1-phenylbenzoxazole** (HENRICH and SCHIERENBERG), 1904, A., i, 1049.
- p*-Ethoxyphenylbenzylmethylallylammonium salts**, resolution of, into optical isomerides (WEDEKIND and FRÖHLICH), 1907, A., i, 409.
- p*-Ethoxyphenyl benzyl sulphide** (TABOURY), 1905, A., i, 644.
- δ -Ethoxy- α -phenylbutan- γ -one** and its semicarbazone (SOMMELET), 1912, A., i, 334.
- α -*cis*-, and *trans*-*p*-Ethoxyphenylcamphoric acids** (PIUTTI, LEONE, and D'EMILIO), 1910, A., i, 675.
- p*-Ethoxyphenylcamphorimide** (PIUTTI, LEONE, and D'EMILIO), 1910, A., i, 675.
- p*-Ethoxyphenylcamphorylimide** (*camphenal*) as an antipyretic (HOUGHTON), 1906, A., ii, 188, 379.
- p*-Ethoxyphenylcarbamic acid**, trichloroisopropyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), 1911, A., i, 118.
- m*-Ethoxyphenylcarbamide and -cyanamide** (PIERON), 1907, A., i, 121.
- β -Ethoxy- α -phenylcarbamidopropionic acid** (LEUCHS and GEIGER), 1906, A., i, 807.
- 4-Ethoxy-3-phenylisocarbostyryl** (ULRICH), 1904, A., i, 529.
- p*-Ethoxyphenylcitraconamic acid** (PIUTTI, PAGNIELLO, and MARCIANO), 1910, A., i, 672.
- p*-Ethoxyphenylcitraconimide** (PIUTTI, PAGNIELLO, and MARCIANO), 1910, A., i, 672.
- action of alkali alkyl oxides on (PIUTTI), 1907, A., i, 313.
- 2-Ethoxy-2-phenylcoumaran** (STOERMER and KIPPE), 1904, A., i, 183.
- β -Ethoxy- γ -phenylcrotonic acid**, α -cyano-, ethyl ester and anilide (SMITH and THORPE), 1907, T., 1905; P., 249.
- Ethoxyphenylisocrotonic acids**, γ -*o*- and -*m*-, and their esters (KLAGES), 1904, A., i, 1002.

- p*-Ethoxyphenyldiacetonitrile (v. MEYER and SCHUMACHER), 1908, A., i, 910.
- 1-*p*-Ethoxyphenyl-2:5-dimethylpyrrole-3:4-dicarboxylic acid, ethyl ester and *p*-ethoxyanil of (ROSSI), 1906, A., i, 982.
- α -Ethoxy- α -phenylethane, β -nitro- (MEISENHEIMER and HEIM), 1905, A., i, 269.
- p*-Ethoxyphenylethyl alcohol (AKTIENGESELLSCHAFT FÜR ANILIN-FABRIKATION), 1911, A., i, 857.
- o*-Ethoxyphenylethylamine (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 629.
- m*-Ethoxyphenylethylamine hydrochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 629.
- m*-Ethoxyphenylethyl dimethylamine (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 629.
- Ethoxyphenylethyl propiophenone, and its semicarbazide-semicarbazone (REYNOLDS), 1910, A., i, 858.
- m*-Ethoxyphenylethyl trimethylammonium chloride and methiodide (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 629.
- p*-Ethoxyphenyl fumaric diamide (PIUTTI), 1910, A., i, 24.
- 5-Ethoxyphenylglycine-2-carboxylic acid (FRIEDLÄNDER, BRUCKNER, and DEUTSCH), 1912, A., i, 319.
- p*-Ethoxyphenylglyoxylic acid and its derivatives (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), 1911, A., i, 866.
- β -*p*-Ethoxyphenylhydantoin and its γ -alkyl compounds and their bromoderivatives (FRERICHS and BREUSTEDT), 1903, A., i, 17.
- α -Ethoxyphenylhydrocoumaric acid, β -bromo- (STOERMER and FRIEMEL), 1911, A., i, 633.
- p*-Ethoxyphenyl-hydrophthalamic and -phthalamic acids (PIUTTI and ABATI), 1903, A., i, 424.
- p*-Ethoxyphenyliminocamphor and its hydrochloride and hydroxylamino-derivative (FORSTER and THORNLEY), 1909, T., 952.
- p*-Ethoxyphenylitaconamic acids and their silver salts (PIUTTI, FOA, and ROSSI), 1910, A., i, 673.
- p*-Ethoxyphenylitacondiamide (PIUTTI, FOA, and ROSSI), 1910, A., i, 674.
- p*-Ethoxyphenylitaconimide (PIUTTI, FOA, and ROSSI), 1910, A., i, 673.
- p*- and *s*-*p*-Ethoxyphenylmaleimide (PIUTTI), 1910, A., i, 23.
- p*-Ethoxyphenylmaleinamic acid (PIUTTI), 1910, A., i, 23.
- p*-Ethoxyphenylmesacondiamide (PIUTTI, PAGNIELLO, and MARCIANO), 1910, A., i, 673.
- 6-Ethoxy-1-phenyl-2-methylbenzimidazole, 4:7-dinitro- (MELDOLA and KUNTZEN), 1911, T., 1294.
- 5-Ethoxy-1-phenyl-3-methylpyrazole, 4-amino-, and its hydrochloride and acyl derivatives (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 472.
- 4-Ethoxy-3-phenyl-6-methylquinoline. See 3-Phenyl-6-methylkynurine, *O*-ethyl ether.
- α -2'-Ethoxyphenyl-2-nitro-3:4-dimethoxy cinnamic acid (PSCHORR and ZEIDLER), 1910, A., i, 425.
- Ethoxyphenyl-1:2:4-oxadiazoles, 3:5- and 5:3- (JOHNSON and MENGE), 1904, A., i, 949.
- 2-Ethoxy-3-phenylisooxazolidone (POSNER), 1906, A., i, 956.
- Ethoxy- α -phenylpentenecarboxylic acids (DIMROTH and FEUCHTER), 1903, A., i, 630.
- p*-Ethoxyphenylphthalide (MEYER and FISCHER), 1911, A., i, 723.
- o*-Ethoxyphenylpropionic acid, bromo- (MICHAEL and LAMB), 1907, A., i, 135.
- β -Ethoxyphenylpropionic acid, *mono*- and *di*-bromo- $\alpha\beta$ -dibromo- (MICHAEL and LAMB), 1907, A., i, 135.
- β -Ethoxy- β -phenylpropionic acid, and its methyl ester (SCHRAUTH, SCHOELLER, and STRUENSEE), 1911, A., i, 642.
- o*-Ethoxy- β -phenylpropionic acid, $\alpha\beta$ -di-bromo-5-nitro-, methyl ester (CLAYTON), 1910, T., 2110.
- m*-Ethoxy- β -phenylpropionic acid and its sodium salt (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 865.
- 7-Ethoxy-3-phenylpyrazoquinazoline (MICHAELIS and LEO), 1910, A., i, 515.
- 1-*p*-Ethoxyphenylpyridinium bromide, 3-hydroxy- (KÖNIG), 1906, A., i, 109.
- 6-Ethoxy-2-phenylpyrimidine, 4-hydroxy- (PINNER), 1903, A., i, 1018.
- Ethoxyphenylpyrocinchonamic acid, *p*-phenetidine salt of (PIUTTI and ABATI), 1910, A., i, 674.
- p*-Ethoxyphenylpyrocinchonimide (PIUTTI and ABATI), 1910, A., i, 674.
- 3-*p*-Ethoxyphenylrhodanic acid and its 5-benzylidene and 5-furfurylidene derivatives (WAGNER), 1907, A., i, 234.
- p*-Ethoxyphenyltartronic acid, methyl ester (GUYOT and ESTEVA), 1909, A., i, 306.

- p*-Ethoxyphenylterephthaldiamide (PIUTTI, PUGLIESE, and SELVAGGI), 1910, A., i, 676.
- 5-Ethoxy-1-phenyl-1:2:3-triazole (DIMROTH and EBERHARDT), 1905, A., i, 99.
- 3-Ethoxy-1-phenylurazole, potassium and silver salts of (ACREE), 1907, A., i, 798.
- 4-Ethoxyphthalyl-alanine and -glycine and their ethyl esters (KUSEL), 1904, A., i, 619.
- Ethoxypinene, iodo-derivatives of (DENARO and SCARLATA), 1903, A., i, 844.
- α -Ethoxypiperonylacrylic acid, ethyl ester, and its isomeride (HOERING), 1907, A., i, 624.
- Ethoxypiperonylidene pinacolone, α - and β -, and bromo- (BOON and WILSON), 1910, T., 1755; P., 208.
- α -Ethoxypiperonylpropionic acid, β -bromo-, ethyl ester (HOERING), 1907, A., i, 624.
- γ -Ethoxypropane, β -chloro- α -cyano- and α -cyano- β -hydroxy- (LESPIEAU), 1905, A., i, 256.
- dl*- α -Ethoxypropionic acid, *l*-bornyl and *l*-menthyl esters, hydrolysis of, by alkali (MCKENZIE and THOMPSON), 1905, T., 1017; P., 184.
- β -Ethoxypropionic acid, ethyl ester (PALOMAA and KILPI), 1911, A., i, 176.
- o*-Ethoxypropionylacetophenone (PISTERMANN and TAMBOR), 1912, A., i, 486.
- Ethoxypropiophenone and phenylhydrazones (KÖHLER), 1909, A., i, 939.
- α -Ethoxy- α -propoxyethane, $\beta\beta$ -dichloro- (ODDO and MAMELI), 1904, A., i, 281.
- Ethoxyisopropylacetoacetic acid, ethyl ester and its sodio-derivative (MERLING, WELDE, EICHWEDE, and SKITA), 1909, A., i, 480.
- α -Ethoxypropylbenzene, γ -chloro- (HUBEN and FÜHRER), 1908, A., i, 74.
- γ -Ethoxypropylene, α -cyano-. See γ -Ethoxycrotonic acid, nitrile of.
- 1-Ethoxy-1-isopropylcyclopropane (BRUYLANTS), 1909, A., i, 227.
- 6-Ethoxy-2-propylquinol (THOMS), 1903, A., i, 558.
- 4-Ethoxypyridine (PERATONER and AZZARELLO), 1906, A., i, 381.
- 3-Ethoxy-4-pyridone (PERATONER and TAMBURELLO), 1905, A., i, 808.
- 3-Ethoxy-4-pyridone, 1-hydroxy- (PERATONER and TAMBURELLO), 1912, A., i, 301.
- 2-Ethoxy-4-pyridone-6-carboxylic acid, and 1-hydroxy-, and derivatives (PERATONER and TAMBURELLO), 1912, A., ii, 300.
- 5-Ethoxypyrimidine, 2:6-dichloro- and 2:6-dithio- (dithio-5-ethoxypyrimidin) (JOHNSON and GUEST), 1909, A., i, 745.
- 3-Ethoxy- γ -pyrone (PERATONER and SPALLINO), 1905, A., i, 806.
- Ethoxyquinazoline, 2- and 4- (BOGERT and MAY), 1909, A., i, 329.
- Ethoxy-*o*-quinocatechol, hexachloro-, hemiether of (JACKSON and KELLEY), 1909, A., i, 495.
- Ethoxy-*o*-quinocatechol hemiether, hexachloro-, and its acetyl derivative (JACKSON and KELLEY), 1912, A., i, 275.
- 2-Ethoxyquinoline, compound of, with mercuric chloride (BOGERT and MAY), 1909, A., i, 329.
- 4-Ethoxyquinoline and its ψ -ethyl ether (MEYER), 1906, A., i, 605.
- 6-Ethoxyquinoline, 5-bromo-, and its methiodide and ethobromide (HOWITZ and BÄRLOCKER), 1903, A., i, 279.
- 5-chloro-, and its additive salts (HOWITZ and WITTE), 1905, A., i, 469.
- Ethoxyquinolineazophenol (FOX), 1910, T., 1347.
- p*-Ethoxysalicylaldehyde (DUMONT and v. KOSTANECKI), 1909, A., i, 320.
- p*-Ethoxyselenophenol (TABOURY), 1906, A., ii, 835.
- 2-Ethoxystilbene, 4'-hydroxy- (STOERMER and FRIEMEL), 1911, A., i, 633.
- α -Ethoxystyrene (TIFFENEAU), 1908, A., i, 19.
- α -Ethoxystyrene, β -nitro- (WIELAND), 1903, A., i, 768.
- Ethoxysuccinic acid, ethyl ester, action of ethyl sodiomalonate on (STAUDINGER), 1905, A., i, 736.
- Ethoxyterephthalic acids, 2- and 4- (EYKMAN), 1904, A., i, 665.
- 1-Ethoxy- Δ^2 -tetrahydrobenzene. See 1-Ethoxy- Δ^2 -cyclohexene.
- 9-Ethoxy- $\Delta^{1(6)}$ -tetrahydrocarbazole (BORSCHKE, WITTE, and BOTHE), 1908, A., i, 366.
- 2-Ethoxytetrahydropyrimidine (FARBENFABRIKEN VORM. F. BAYER & CO.), 1905, A., i, 159.
- 3-Ethoxy-2:2:5:5-tetramethyl-2:5-dihydrofuran (DUPONT), 1911, A., i, 554.
- 2'-Ethoxy-2-thioldiphenylsulphone, and its methyl ether (FRIES and VOGT), 1911, A., i, 556.
- 2-Ethoxy-2-thiol-3-phenyl-4-oxazolid-one (HOLMBERG), 1912, A., i, 132.

- 2-Ethoxythionaphthen** and its **-1-carboxylic acid** (AUWERS), 1912, A., i, 1011.
- Ethoxythioxanthone**, chloro- (MARSDEN and SMILES), 1911, T., 1356.
- Ethoxyltolualdehydes** and their derivatives, synthesis of (GATTERMANN), 1908, A., i, 32.
- Ethoxyltoluene**. See Tolyl ethyl ether.
- p-Ethoxy-m-toluenesulphonic acid** and its metallic salts (ROBERTS and ALLEMAN), 1911, A., i, 369.
- Ethoxyltoluic acids**, 2-*p*- and 4-*o*- (EYKMAN), 1904, A., i, 665.
- 4-Ethoxy-2:5-tolquinone** (JACOBSON and JANKOWSKI), 1909, A., i, 853.
- 4-Ethoxy-2:5-tolquinone-2(4)-m-xylylimine** (JACOBSON and FABIAN), 1909, A., i, 854.
- 2-Ethoxy-1-p-tolylantraquinoneiminoazole**, 4-hydroxy-, and its sulphonic acid (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 141.
- 6-Ethoxy-1-o-tolylbenziminazole** (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 122.
- 6-Ethoxy-1-p-tolylbenziminazole**, 2-thiol-, and its acetyl and 5-methyl derivatives (JACOBSON and HUGERSHOFF), 1904, A., i, 106.
- 2-Ethoxyltolyl-carbamide**, -4-thiocarbamide-, -4-carbamic acid, ethyl ester, -4-hydrazine, and -4-*d*-glucosazone (SPIEGEL, MUNBLIT, and KAUFMANN), 1906, A., i, 838.
- 6-Ethoxy-1-o-tolyl-4-methylbenziminazole** (JACOBSON and HUGERSHOFF), 1904, A., i, 107.
- 3-Ethoxy-2:6:3'-trimethyldiphenyl**, 4:6'-diamino-, and its diformyl and disalicylidene derivatives, and bisazo-compound from (JACOBSON and FULDA), 1909, A., i, 854.
- 5-Ethoxy-2:3':5'-trimethyldiphenyl**, 4:2'-diamino-, and its disalicylidene derivative (JACOBSON and FABIAN), 1909, A., i, 854.
- 3-Ethoxy-2:6:4'-trimethyldiphenylamine**, 4-amino-, and its salicylidene derivative (JACOBSON and FULDA), 1909, A., i, 853.
- 5-Ethoxy-2:4:2'-trimethyldiphenylamine**, 4'-amino-, and its acetyl and salicylidene derivatives, and 4'-hydroxy- (JACOBSON and FABIAN), 1909, A., i, 854.
- 6-Ethoxy-3:4:5-trimethylpyridine**, 2-hydroxy- (ROGERSON and THORPE), 1905, T., 1706.
- 5-Ethoxy-1:3:7-trimethylisouric acid** (BILTZ), 1911, A., i, 168.
- Ethoxytriphenylallyl alcohol** (REYNOLDS), 1910, A., i, 859.
- 7-Ethoxy-1:2:3-triphenyl-1:2-dihydroquinoxaline**, 1-*m*-bromo-2-hydroxy- (JACOBSON, FRANZ, and ZAAR), 1904, A., i, 122.
- α -(or β)-Ethoxy- β -1:2-triphenyl-3-ethylhydrazimethylene** (RASSOW and BURMEISTER), 1911, A., i, 820.
- α -o-Ethoxytriphenylfulgenic acid** and its fulgide (STOBBE and NETTEL), 1906, A., i, 279.
- 1-Ethoxy-1:2:3-triphenylindene** (KOHLEK), 1908, A., i, 777.
- p-Ethoxytriphenylmethane** (BISTRZYCKI and HERBST), 1904, A., i, 45.
- m-Ethoxytritanic acid** and its ethyl ester, and **m-Ethoxytritan** (v. LIEBIG and KEIM), 1907, A., i, 930.
- 5-Ethoxytritanolactone**, 3-hydroxy- (v. LIEBIG), 1905, A., i, 782.
- o-Ethoxytritanol-6-sulphonic anhydride** (v. LIEBIG and HERB), 1908, A., i, 450.
- 5-Ethoxyuracil**, *dithio*-. See 5-Ethoxypyrimidine, 2:6-*dithio*-.
- α -Ethoxyvaleric acid** and its derivatives (BLAISE and PICARD), 1912, A., i, 535.
- δ -Ethoxy- γ -valerolactone** (LEUCHS, GIUA, and BREWSTER), 1912, A., i, 604.
- 1- α (or β)-Ethoxyvinylthiolantraquinone** (GATTERMANN), 1912, A., i, 1004.
- m-Ethoxyvinylthiolbenzoic acid**, *o*-*di*-chloro- (BADISCHE ANILIN- & SODA-FABRIK), 1909, A., i, 719.
- 4-Ethoxy-m-xylene-5-sulphonic acid** and its salts (JUNGHAHN), 1903, A., i, 23.
- 4-Ethoxy-5-m-xylidine**, acetyl derivative, and thiocarbamide of (JACOBSON and FULDA), 1909, A., i, 853.
- 4-Ethoxy-m-2:5-xyloquinone** and corresponding dihydroxy-compound (JACOBSON and FULDA), 1909, A., i, 853.
- 4-Ethoxyxylylenediamine**, 1-nitro-, and its acyl derivatives (EINHORN and MAUERMAYER), 1906, A., i, 250.
- Ethyl α -acetyl-amino- $\beta\beta$ -trichlorobutyl ether** (FREUNDLER), 1907, A., i, 14.
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- Ethyl alcohol**, estimation of, in chloroform (NICLOUX), 1906, A., ii, 584.
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Ethyl acetoacetate-azobenzene-*p*-azosalicylic acid (BÜLOW and HAAS), 1911, A., i, 339.

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Ethyl β -acetoxy- β -phenyl-*tert*-butyl ketone (BLAISE and HERMAN), 1911, A., i, 881.

Ethylacetylacetone and its condensation products with multivalent phenols (BÜLOW and DEIGLMAYER), 1905, A., i, 149.

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α -Ethylacraldehyde and its semicarbazone (SOMMELET), 1907, A., i, 109.

α -Ethylacrylic acid, reactions of, and its derivatives (BLAISE and LUTTRINGER), 1905, A., i, 626.

β -Ethylacrylic acid, esterification constant of (SUDBOROUGH and THOMAS), 1907, T., 1035; P., 146.

α -Ethyladipic acid, formation of, from δ -cyanoheptioic acid (BEST and THORPE), 1909, T., 714; P., 93.

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- Ethylamines**, hydroxy-, preparation of aromatic (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 418.
- Ethylaminoacetethylamide** (EINHORN and HÜTZ), 1903, A., i, 90.
- γ -Ethylaminoacetoacetic acid**, α -cyano-, ethyl ester and its salts (BENARY), 1908, A., i, 601.
- Ethylaminoacetocatechol** and its hydrochloride (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 873.
- Ethylaminoacetocatechol**, hydroxy-, and its hydrochloride (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 873.
- Ethylaminoacetoneitrile** and its derivatives (KNOEVENAGEL and MERCKLIN), 1904, A., i, 982.
- Ethylaminoacetoneitrile**, cyano-, and hydrobromide (v. BRAUN), 1907, A., i, 900.
- Ethylaminoanisole**, *dinitro*- (BLANKSMA), 1904, A., i, 577.
- p*-Ethylamino-benzaldehyde** and its oxime and phenylhydrazones and *benzylidenesulphanilic acid* (ULLMANN and FREY), 1904, A., i, 423.
- Ethylaminobenzaldehydephenylhydraz-one**, liquid crystals of (ROTARSKI), 1908, A., i, 640.
- o*-Ethylaminobenzoic acid**. See *Ethylanthranilic acid*.
- 4-Ethylaminobenzoic acid** and its acetyl and chloroacetyl derivatives (HUBBEN and FREUND), 1910, A., i, 111.
- diethylaminoethyl ester* (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 924.
- 4-Ethylaminobenzoic acid**, 3-nitro- and nitroso- (BAUDISCH), 1907, A., i, 132.
- 3-nitro-, ethyl ester (REVERDIN and DE LUC), 1909, A., i, 476.
- 3:5-*dinitro*- (REVERDIN and DE LUC), 1909, A., i, 477.
- 2-Ethylaminobenzophenone**, 3:5-*dinitro*- (ULLMANN and BROIDO), 1906, A., i, 188.
- Ethylaminoconiine** and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 940.
- N*-Ethyl-6-aminocoumarin** and its benzenesulphonyl and nitroso-derivatives (MORGAN and MICKLETHWAIT), 1904, T., 1238; P., 177.
- β -Ethylamino- α -cyanocinnamic acid**, methyl ester (SCHMITT), 1903, A., i, 399.
- γ -Ethylamino- α -dimethylbutylbenzoate** (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), 1907, A., i, 925.
- 2- β -Ethylaminoethylpiperidine** and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 939.
- (ζ -Ethylaminoheptoic acid and its platinichloride** (v. BRAUN), 1909, A., i, 508.
- Ethylaminocyclohexane**, *dihydroxy*-, and its hydrochloride (BRUNEL), 1905, A., i, 869.
- o*-Ethylaminocyclohexanol** and its hydrochloride (BRUNEL), 1905, A., i, 869.
- Ethylaminoisohexonitrile** (KNOEVENAGEL and MERCKLIN), 1904, A., i, 982.
- 4'-Ethylamino-2:4-*dihydroxydiphenylmethane*** (FRIEDLÄNDER and v. HORVATH), 1903, A., i, 253.
- 2-Ethylaminoisatin**, 5:7-*di*bromo- (HASLINGER), 1907, A., i, 976.
- 4-Ethylamino-5-keto-2:2:4-trimethyltetrahydrofuran**, and its phenylcarbamide and nitroso-derivative (KOHN and BUM), 1910, A., i, 137.
- 2-Ethylaminomesitylenic acid** (WHEELER and HOFFMAN), 1910, A., i, 666.
- 4-Ethylamino-7-methylcoumarin** (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.
- β -Ethylamino- β -methylpentane**, δ -bromo-, hydrobromide of (KOHN and MORGENSTERN), 1907, A., i, 681.
- 1-Ethylaminonaphthalene-2-sulphonic acid** and its salts (RUYTER DE WILDT), 1904, A., i, 572.
- Ethylamino-*n*-octoneitrile** (KNOEVENAGEL and MERCKLIN), 1904, A., i, 982.
- 2-Ethylaminophenetole**, 3:5-*dinitro*-, and its nitroamine (BLANKSMA), 1905, A., i, 431.
- N*-Ethyl-*o*-aminophenol** (LEES and SHEDDEN), 1903, T., 756; P., 132.
- p*-Ethylaminophenol** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), 1909, A., i, 222.
- p*-Ethylaminophenyl-2:7-*dihydroxy*-naphthylmethane** (FRIEDLÄNDER and v. HORVATH), 1903, A., i, 253.
- p*-Ethylaminophenyl- α - and - β -hydroxy-naphthylmethanes** (FRIEDLÄNDER and v. HORVATH), 1903, A., i, 253.
- 5-Ethylamino-1-phenyl-3-methylpyrazole-4-azobenzene** and its additive compounds (MICHAELIS and KLOPSTOCK), 1907, A., i, 736.
- β -Ethylaminopropaldehyde** and its diethylacetal (WOHL and LOSANITSCH), 1906, A., i, 107.

- 2- β -Ethylaminopropylpyridine** and its additive salts and nitroso-derivative (LÖFFLER and KIRSCHNER), 1905, A., i, 939.
- o*-Ethylamino-*p*-sulphobenzoic acid** and its derivatives (KASTLE), 1911, A., i, 201.
- 6-Ethylamino-3-tolualdehyde** and its oxime and phenylhydrazone (ULLMANN and FREY), 1904, A., i, 424.
- 3-Ethylaminotoluene**, 2:4:6-*trinitro*-, and its nitroamine (BLANKSMA), 1903, A., i, 164.
- 4-Ethylamino-*m*-toluic acid** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35; (WHEELER and HOFFMAN), 1910, A., i, 666.
- 6-Ethylamino-*m*-toluic acid** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35.
- 5-Ethylaminotolylmethyl-*m*-toluic acid**, 2-hydroxy-, and its sodium salt (ANILINFABRIK- and EXTRAKT-FABRIKEN VORM. J. R. GEIGY), 1911, A., i, 978.
- 4-Ethylamino-2:2:3-trimethyl-1-ethyl-5-pyrrolidone** (KOHN and BUM), 1910, A., i, 137.
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- Ethylammonium cobaltinitrite** (HOFMANN and BURGER), 1907, A., i, 752.
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- tungstate** (EKELEY), 1909, A., i, 556.
- Ethyl*iso*amylcarbinol** and its acetyl derivative (BUELENS), 1909, A., i, 78.
- Ethyl *n*-amyl ether** and its derivatives (BLAISE and PICARD), 1912, A., i, 232.
- Ethyl *iso*amyl ether, β -chloro-** (GAUTHIER), 1909, A., i, 354.
- Ethyl *n*- and *iso*-amyl ketones** and their semicarbazones (BOUVEAULT and LOQUIN), 1905, A., i, 18.
- S*-Ethyl-*N*-*iso*amyl*di*thiourethane** (V. BRAUN), 1903, A., i, 15.
- Ethylaniline** and its oxalate (BAMBERGER and TICHWINSKY), 1903, A., i, 131, 371; (HARRIES), 1903, A., i, 293.
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- picrate (VIGNON and ÉVIEUX), 1908, A., ii, 665.
- telluri-bromide and -chloride (GUTBIER, FLURY, and EWALD), 1912, A., i, 689.
- Ethylaniline, bromo-derivatives**, and their perbromides (FRIES), 1906, A., i, 647.
- bromonitro-derivatives (BLANKSMA), 1903, A., i, 333.
- 3:4-*dichloro*-6-nitro- (BLANKSMA), 1903, A., i, 334.
- hydroxy-, preparation of, and its *o*-carboxylic acid (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 736.
- dibenzoyl derivative of (AUWERS and SONNENSTUHL), 1904, A., i, 1055.
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- 2:4:5-*trinitro*- (VAN ROMBURGH), 1910, A., i, 20.
- Ethylanilinacetic acid**, amide and nitrile of (BADISCHE ANILIN- & SODA-FABRIK), 1903, A., i, 754.
- Ethylanilindiazobenzene** (VIGNON and SIMONET), 1905, A., i, 495.
- γ -Ethylanilino- $\alpha\alpha$ -dimethylacetoacetic acid**, ethyl ester (GAULT and THIRODE), 1910, A., i, 357.
- 3-Ethylanilinomethyl-1-phenyl-4:4-dimethylpyrazolone** (GAULT and THIRODE), 1910, A., i, 357.
- Ethylanilinomethyl *isopropyl* ketone** and its phenylhydrazone (GAULT and THIRODE), 1910, A., i, 357.
- 2-Ethylanilino-3:5-*dinitro*benzoic acid** (PURGOTTI and LUNINI), 1904, A., i, 316.
- 5-Ethylanilino-1-phenyl-3-methylpyrazole, 4-amino-**, and its hydrochloride and benzoyl derivatives (MICHAELIS and ABRAHAM), 1911, A., i, 1038.
- Ethylanilopyrines**, 2- and ψ -, and their derivatives (MICHAELIS and MIELECKE), 1908, A., i, 61.
- Ethylanisoles, *m*- and *p*-** (KLAGES and EPPELSHEIM), 1904, A., i, 46.

- Ethylanthranilic acid** (*o*-ethylamino-benzoic acid), preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1904, A., i, 50.
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- Ethylanthranilic acid**, ω -cyano- (BADISCHE ANILIN- & SODA-FABRIK), 1905, A., i, 438.
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- 2-Ethylanthranol-9** (SCHOLL, POTTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- 2-Ethylanthraquinone**, and 1-amino-, 1-iodo-, and 1-nitro- (SCHOLL, POTTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- 2-Ethylanthrone-9** (SCHOLL, POTTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- Ethyl-3-antipyrine** and its salts (MICHAELIS and DREWS), 1907, A., i, 158.
- Ethylarsine** (AUGER), 1904, A., i, 725.
- Ethylauric dibromide** (POPE and GIBSON), 1907, T., 2064; P., 295.
- 5-Ethylbarbituric acid** (MERCK), 1906, A., i, 537.
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- Ethylbebeerine** (SCHOLTZ), 1911, A., i, 913.
- m*-**Ethylbenzaldehyde**, *p*-hydroxy-, and its azine, synthesis of (GATTERMANN), 1908, A., i, 28.
- p*-**Ethylbenzaldehyde** and its hydrazone, oxime, and semicarbazone (FOURNIER), 1903, A., i, 347.
- p*-**Ethylbenzaldehydephenylbenzylhydr-azone** (FOURNIER), 1904, A., i, 63.
- o*-**Ethylbenzanilide**, β -chloro- (V. BRAUN and SOBECKI), 1911, A., i, 747.
- Ethylbenzene** and toluene, vapour pressures and boiling points of mixtures of (YOUNG and FORTEY), 1903, T., 52.
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- Ethylbenzene**, heat of combustion of (JESSE), 1912, A., ii, 1041.
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- Ethylbenzene**, *p*-amino-, *p*-iodoso- and *p*-iodoxy- (WILLGERODT and BERGDOLT), 1903, A., i, 745.
 β -bromo- α -3:4-trihydroxy-, β -bromo- α -3:4-trihydroxybromo-, and α -3:4-trihydroxy- β -methylaminobromo- (BÖTTCHER), 1909, A., i, 153.
 α : β : β :5-pentabromo-2-hydroxy-, and its acetyl derivative (FRIES and MOSKOPF), 1910, A., i, 332.
 $\alpha\alpha\beta\beta$ -tetrabromo-*o*-nitro- (HELLER and TISCHNER), 1910, A., i, 37.
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 $\beta\beta$ -dichloro-, preparation of (AUWERS and KEIL), 1904, A., i, 27.
 β -chloro-2- and -4-amino-, and their salts (V. BRAUN and GAWRILOW), 1912, A., i, 498.
 β -chloro- α -3:4-trihydroxy- (BÖTTCHER), 1909, A., i, 153; (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1909, A., i, 569.
 α -*p*-dihydroxy-, acetyl derivative (TUTIN, CATON, and HANN), 1909, T., 2124.
o- and *p*-iodo-, and their derivatives (SCHREINER), 1910, A., i, 467.
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 α -nitro-, and its ψ -nitrole, and ψ -nitro- (BAMBERGER and SELIGMAN), 1903, A., i, 324.
 β -nitro- α -hydroxy-, and its ethers (MEISENHEIMER and HEIM), 1905, A., i, 269.
 β -nitro- α -2:5-trihydroxy- (REMFY), 1911, T., 287.
 β -nitro- α -hydroxylamino- (POSNER and UNVERDORFEN), 1912, A., i, 457.
- Ethylbenzenes**, α -amino-. See *o*-Phenylethylamines.
- p*-**Ethylbenzeneazobenzene** and its derivatives (WILLGERODT and HARTER), 1905, A., i, 552.
- Ethylbenzhydrlamine** and its hydrochloride and nitrate (BUSCH and LEEFHELM), 1908, A., i, 153.
- N*-**Ethylbenzidine** (KASSOW and BECKER), 1911, A., i, 933.

- 2-Ethylbenziminazole-5-carboxylic acid**, methyl ester and derivatives (EINHORN and UHLFELDER), 1910, A., i, 173.
- N-Ethylbenziminino-ethers** (LANDER), 1903, T., 320; P., 16.
- Ethylbenzocycloheptadienone** (THIELE and WEITZ), 1910, A., i, 854.
- p-Ethylbenzoic acid** and $\beta\beta$ -dichloro- (AUWERS and KEIL), 1904, A., i, 26.
- Ethylbenzoic sulphinide** ("ethylsaccharin"), reaction of with magnesium organic compounds (SACHS and LUDWIG), 1904, A., i, 267.
- p-Ethylbenzonitrile** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), 1911, A., i, 866.
- 4-Ethylbenzophenone-2'-carboxylic acid** (SCHOLL, POTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- 2-Ethylbenzopyryonium** ferrichloride (DECKER and v. FELLEBERG), 1909, A., i, 116.
- Ethyl-p-benzoquinone**, tribromo-, and its anilide (ZINCKE and REINBACH), 1905, A., i, 882.
- 2-Ethylbenzisooxazolone** (BAMBERGER and PYMAN), 1909, A., i, 574.
- p-Ethylbenzoyl cyanide** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), 1911, A., i, 866.
- Ethylbenzoylacetone** (α -phenyl- β -ethylbutanedione) and its copper salt (DIECKMANN), 1912, A., i, 869.
- p-Ethylbenzoylcarbinol** and its acetate and chloride and their semicarbazones (AUWERS), 1906, A., i, 962.
- N-Ethyl-S-benzoyldithiourethane** (v. BRAUN), 1904, A., i, 90.
- Ethylbenzylidene-aniline** and -toluidine, preparation of (FOURNIER), 1903, A., i, 347.
- α -Ethylberberine salts** (FREUND and MATER), 1907, A., i, 633.
- 1-Ethyl-2- β -bromoethylpiperidine** and its platinichloride (LÖFFLER and GROSSE), 1907, A., i, 440.
- 1-Ethyl-3,4-dibromocyclohexane**, $\alpha\beta$ -dibromo- (LEBEDEFF and SKAVRONSKAJA), 1911, A., i, 959.
- 1-Ethyl-4- $\alpha\beta$ -dibromopropylbenzene** (KUNCKELL and DETTMAR), 1912, A., i, 432.
- Ethyl dibromosuccinyl** (FICHTER and GOLDHABER), 1904, A., i, 648.
- α -Ethylbutaldehyde oxime** and semicarbazone (SOMMELET), 1907, A., i, 108.
- Ethylcyclobutane** (ZELINSKY and GUTT), 1908, A., i, 617.
- β -Ethyl- $\Delta\alpha$ -butenylbenzene** and its dibromide (KLAGES and HAEN), 1904, A., i, 497.
- Ethyl isobutoxymethyl ketone** and its derivatives (BLAISE and PICARD), 1911, A., i, 175.
- Ethylisobutyl**. See *iso*Hexane.
- Ethyl-butyl- and isobutyl-aniline** (FRÖHLICH), 1909, A., i, 376.
- p-Ethyltert.-butylbenzene** (DARZENS), 1905, A., i, 66.
- Ethyl isobutyl diketone** (*propionylisovaleryl*) (LOCQUIN), 1905, A., i, 20. oximes of (LOCQUIN), 1905, A., i, 19.
- β -Ethyl- α -butylene α -chlorohydrin** (FOURNEAU and TIFFENEAU), 1907, A., i, 818.
- β -Ethylbutylene $\alpha\beta$ -glycol**, preparation of (HENRY), 1907, A., i, 745.
- Ethyl isobutyl ether**, β -chloro- (GAUTHIER), 1909, A., i, 354.
- Ethyl isobutyl ketone**, β -chloro- (BLAISE and MAIRE), 1906, A., i, 142.
- isonitroso-, semicarbazone of** (PONZIO), 1904, A., i, 723.
- Ethylbutylmalonic acid**, ethyl ester (RAPER), 1907, T., 1837.
- 4-Ethyl-3-isobutyl-5-pyrazolone** (LOCQUIN), 1904, A., i, 552.
- Ethylisobutylsilicane**, dichloro- (BYGDEN), 1911, A., i, 846.
- α -Ethylbutyramide**, α -bromo- (KALLE & Co.), 1905, A., i, 638.
- ciano-** (CONRAD and ZART), 1905, A., i, 753, 754.
- α -Ethylbutyranilide**, α -cyano- (CONRAD and ZART), 1905, A., i, 753; (HADLEY), 1912, A., i, 699.
- α -Ethylbutyric acid**, formation of methyl propyl ketone from, in the organism (BLUM and KOPPEL), 1912, A., ii, 188.
- α -Ethylbutyric acid**, α -amino-, copper salt, and its nitrile and its hydrochloride (v. GULEWITSCH and WASMUS), 1906, A., i, 410.
- and its chloroacetyl and glycol derivatives and α -bromo- (ROSEN-MUND), 1910, A., i, 68.
- α -bromo-, ethyl ester** (RASSOW and BAUER), 1909, A., i, 758.
- γ -chloro- α -hydroxy-, ethyl ester, and its acid α -oxide** (MAIRE), 1908, A., i, 248.
- γ -trichloro- β -hydroxy-, and its methyl ester and salts** (DOEBNER and SEGELITZ), 1905, A., i, 737.
- α -hydroxy-** (SAMEC), 1907, A., i, 747.

- α -Ethylbutyric acid**, α -hydroxy-, 1-phenyl-2:3-dimethyl-5-pyrazolone ester (RIEDEL), 1910, A., i, 434.
- β -hydroxy-**, and its salts (FITTIG, BORSTELMANN, and LURIE), 1904, A., i, 968.
- synthesis of (MATSCHEVITSCH), 1911, A., i, 260.
- β -Ethylbutyric acid**. See Hexoic acid.
- β -Ethyl- γ -butyrolactone** (FICHTER and BEISSWENGER), 1903, A., i, 459.
- γ -Ethylbutyrolactone- γ -carboxylic acid** and its ethyl ester (MAIRE), 1908, A., i, 248.
- Ethylbutyromethylamide**, cyano- (CONRAD and ZART), 1905, A., i, 752.
- α -Ethylbutyronitrile**, α -hydroxy- (ULTÉE), 1906, A., i, 6.
- α -Ethylbutyro-*p*-toluidide**, α -cyano- (HADLEY), 1912, A., i, 699.
- α -Ethylbutyryl chloride**, α -bromo- (KALLE & Co.), 1905, A., i, 638.
- Ethylbutyrylaminoacetic acid**, bromo-, ethyl ester (ROSENMUND), 1910, A., i, 68.
- α -Ethylbutyrylcarbamic acid**, α -bromo-, phenyl ester (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 118.
- α -Ethylbutyrylcarbamide** (FISCHER and DILTHEY), 1905, A., i, 37.
- as a narcotic (FISCHER and v. MERING), 1903, A., i, 552.
- α -Ethylbutyrylcarbamide**, α -bromo- (*adaline*) (ROSENMUND and HERRMANN), 1912, A., i, 244; (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 118; 1912, A., i, 422.
- pharmacology of (FILIPPI), 1911, A., ii, 1120.
- α -Ethylbutyryl-carbamide** and -urethane, α -cyano- (CONRAD and ZART), 1905, A., i, 754.
- α -Ethylbutyryl-carbamide**, -phenylcarbamide, -thiocarbamide, and -guanidine, α -cyano- (MERCK), 1905, A., i, 178.
- β -Ethylbutyrylcarbamide** (GEBRÜDER VON NIESSEN), 1903, A., i, 798.
- α -Ethylbutyryl*s*carbamide** methyl ether, bromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 169.
- α -Ethylbutyrylcarbamil chloride**, α -bromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 953.
- α -Ethylbutyryldiethylglycylmethylenediamine** (EINHORN), 1908, A., i, 610.
- Ethylbutyrylglycineamide**, bromo- (ROSENMUND) 1910, A., i, 69.
- Ethylbutyryl-methyl- and -phenyl-carbamides**, cyano- (CONRAD and ZART), 1905, A., i, 755.
- Ethylcampholenone** (BÉHAL), 1904, A., i, 514.
- Ethylcamphor** and bromo- (MINGUIN), 1904, A., i, 330.
- Ethylcamphorcarboxylic acid** and its isomeric methyl esters (MINGUIN), 1904, A., i, 138.
- Ethylapocamphoric acid**, *cis*- and *trans*-forms, synthesis of, and dihydroxy- (KOMPPA and ROUTALA), 1911, A., i, 381.
- Ethylcarbamic acid**, ethyl ammonium salt (FICHTER and BECKER), 1912, A., i, 15.
- Ethylcarbamic anhydride**, hydroxy-, nitrosoamine from (GABRIEL), 1905, A., i, 651.
- Ethylcarbamide**, α -hydroxy- $\beta\beta$ -dichloro- (ODDO and CUSMANO), 1911, A., i, 943.
- O*-Ethyl*s*carbamide** and its additive salts (STIEGLITZ and NOBLE), 1905, A., i, 639.
- Ethylcarbamidecarboxylic acid**, esters of (MAUGUIN), 1911, A., i, 358.
- β -Ethyl- ψ -carbamidoacrylethyl- ψ -thiocarbamide**, α -cyano- (JOHNSON), 1910, A., i, 69.
- 6-Ethylcarbamino- α -naphthol-3-sulphonic acid**, sodium and barium salts (BADISCHE ANILIN- & SODA-FABRIK), 1910, A., i, 667.
- Ethylcarbamyglycollic acid** (HOLMBERG), 1912, A., i, 131.
- 9-Ethylcarbazole**, 3-nitro- (DELÉTRA and ULLMANN), 1904, A., i, 272.
- Ethylcarbithionic acid**. See Propionic acid, *dithio*-.
- Ethylcarbonatobenzaldehyde** (ROSENMUND), 1912, A., i, 843.
- o*-Ethylcarbonatobenzoic acid**, anhydride of (EINHORN and v. BAGH), 1910, A., i, 260.
- m*-Ethylcarbonatobenzoic acid** (DANIEL and NIERENSTEIN), 1911, A., i, 371.
- p*-Ethylcarbonatobenzoic acid** and its chloride (FISCHER and FREUDENBERG), 1910, A., i, 266.
- p*-Ethylcarbonatobenzoic acid**, 3-nitro-, and its acid chloride (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- o*-Ethylcarbonatobenzoyl chloride** (EINHORN and v. BAGH), 1910, A., i, 260.
- o*-Ethylcarbonatobenzoyl-*p*-aminobenzoic acid**, ethyl ester of (EINHORN and v. BAGH), 1910, A., i, 260.
- o*-Ethylcarbonatobenzoylanthranilic acid**, methyl ester of (EINHORN and v. BAGH), 1910, A., i, 260.

- 2-*o*-Ethylcarbonatobenzoyloxybenzoic acid** (*ethylcarbonylsalicylosalicylic acid*) (BOEHRINGER & SÖHNE), 1910, A., i, 386; (EINHORN, HAAS, v. BAGH, LADISCH, and ROTHLAUF), 1911, A., i, 302.
- p*-Ethylcarbonatobenzoyloxybenzoic acid** and its chloride (FISCHER and FREUDENBERG), 1910, A., i, 266.
- 2-*p*-Ethylcarbonatobenzoyloxybenzoic acid**, 4-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- 3-*p*-Ethylcarbonatobenzoyloxybenzoic acid** (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- 4-*p*-Ethylcarbonatobenzoyloxybenzoic acid**, 3-nitro- (FRANCIS and NIERENSTEIN), 1911, A., i, 643.
- Ethylcarbonato-*isobutyronitrile*** (DAVIS), 1910, T., 951; P., 90.
- Ethylcarbonato- ω -carbethoxyaminoacetophenone** (MANNICH and HAHN), 1911, A., i, 649.
- Ethylcarbonatodi-*p*-oxybenzoyl-*p*-oxybenzoic acid** (FISCHER and FREUDENBERG), 1910, A., i, 266.
- β -Ethylcarbonato- α -ethylcinnamic acid**, ethyl ester (HALLER and BAUER), 1911, A., i, 300.
- 1-Ethylcarbonatoguaiacol**, 5-bromo- (JONA), 1912, A., i, 761.
- Ethylcarbonato- Δ^1 -cyclohexene** (HALLER and BAUER), 1911, A., i, 300.
- β -Ethylcarbonato- α -methylcinnamic acid**, ethyl ester (HALLER and BAUER), 1911, A., i, 300.
- 4-Ethylcarbonato-*m*-nitrobenzoic acid** (DANIEL and NIERENSTEIN), 1911, A., i, 371.
- Ethylcarbonatonitrostyrene** (ROSEN-MUND), 1912, A., i, 843.
- d*-Ethylcarbonatopenta-acetyl-leucodigallic acid** (NIERENSTEIN), 1912, A., i, 470.
- α -Ethylcarbonato- α -phenyl- Δ^{α} -butylene** (HALLER and BAUER), 1911, A., i, 300.
- α -Ethylcarbonato- α -phenyl- Δ^{α} -isobutylene** (HALLER and BAUER), 1911, A., i, 299.
- p*-Ethylcarbonatophenylglyoxylonitrile** (FRANCIS and NIERENSTEIN), 1911, A., i, 644.
- Ethylcarbonatophenylnitroethanol** (ROSEN-MUND), 1912, A., i, 843.
- α -Ethylcarbonato- α -phenyl- Δ^{α} -propylene** (HALLER and BAUER), 1911, A., i, 300.
- Ethylcarbonatopolyacetylpolydigalloyl-leucodigallic acid** (NIERENSTEIN), 1912, A., i, 470.
- γ -Ethylcarbonato- $\beta\beta\beta$ -trimethyl- Δ^{β} -pentene** (HALLER and BAUER), 1911, A., i, 300.
- Ethylcarbonatotri-*p*-oxybenzoyl-*p*-oxybenzoic acid** (FISCHER and FREUDENBERG), 1911, A., i, 266.
- Ethylcarbonylsalicylosalicylic acid**. See 2-*o*-Ethylcarbonatobenzoyloxybenzoic acid.
- Ethylcarbylamine**, compounds of, with cobaltous, ferrous, and ferric chlorides (HOFMANN and BUGGE), 1907, A., i, 904.
- dibromide** and its hydrobromide, hydrochloride, and ethiodide (GUILLEMARD), 1904, A., i, 563.
- action of aniline on (GUILLEMARD), 1905, A., i, 518.
- 2-Ethylcarveol**. See 2-Ethyl- $\Delta^{6:8(9)}$ -menthadien-2-ol.
- 3-Ethylcarboxybenzotetronic acid chloride**. See Coumarin-3-carboxylic acid, 4-chloro-, ethyl ester.
- 3-Ethylcarboxy-6-chlorobenzotetronic acid**. See Coumarin-3-carboxylic acid, 6-chloro-4-hydroxy-, ethyl ester.
- Ethylcatechol**, *dichloro*-, cyclic carbonates of (PAULY and NEUKAM), 1909, A., i, 96.
- dichloromethylene ether* (DELANGE), 1904, A., i, 741.
- methylene ether* (KLAGES and EPPELS-HEIM), 1904, A., i, 46.
- Ethylcatechol**, *dichloro*-, cyclic carbonates of (BARGER), 1908, T., 2081; P., 237.
- Ethyl-di- and -tri-chlorocarbamide** (CHATTAWAY and WÜNSCH), 1909, T., 132.
- Ethyl trichloroethyl ether** (CONSORTIUM FÜR ELECTROCHEMISCHE INDUSTRIE), 1910, A., i, 650.
- 1-Ethyl-2- β -chloroethylpiperidine** and its salts (LÖFFLER and GROSSE), 1907, A., i, 441.
- Ethyltetrachlorophthalide** (BAUER), 1909, A., i, 585.
- Ethyl α -chloro-*n*-propyl ketone** (BLAISE), 1912, A., i, 606.
- 3-Ethylcinchoninic acid** and 2-hydroxy-, and their salts, esters, chlorides, and amides (MULERT), 1906, A., i, 534.
- 3-Ethylcinchoninic acid**, 2-hydroxy-, ethyl ester and chloride (MEYER), 1907, A., i, 342.
- Ethylcinchotoxile**, chloro-, and its picrate and platinichloride (COMAN-DUCCI), 1910, A., i, 583.
- Ethylcinchotoxine**, *isonitroso*- (RABE and RITTER), 1907, A., i, 78.

- Ethylcinchotoxol** (COMANDUCCI and MELONE), 1909, A., i, 409.
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- β -Ethylcinnamic acid** and its derivatives (SCHROETER), 1907, A., i, 531.
- 1-Ethylcitronellol** (AUSTERWEIL and COCHIN), 1910, A., i, 572.
- 2-Ethyleonidine** and its salts (LÖFFLER and PLÖCKER), 1907, A., i, 437.
- 1-Ethyleoumaranone-1-carboxylic acid**, ethyl ester (AUWERS), 1912, A., i, 1010.
- α -Ethyl-*o*-coumaric acid** (FRIES and VOLK), 1911, A., i, 204.
- Ethyl-coumaric and -coumarinic acids**, preparation and isomerism of (MICHAEL and LAMB), 1907, A., i, 134.
- Ethylcoumarinic acid**, action of chlorine on (MICHAEL and LAMB), 1907, A., i, 136.
- 1-Ethylcoumarone**, α -amino- and its salts (STOERMER and SCHÄFFER), 1903, A., i, 847.
- Ethylcreatinine salts** (HENZERLING), 1911, A., i, 21.
- α -Ethylcrotonamide** and its dibromide (MANNICH and ZERNIK), 1908, A., i, 399.
- α -Ethylcrotonic acid**, ethyl ester (PERKIN and PICKLES), 1905, T., 659; P., 131.
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- Ethylcrotonylcarbamide** (ROSENMUND and HERMANN), 1912, A., i, 244.
- Ethylcusparine** and its hydrochloride and platinichloride (BECKURTS and FRERICHs), 1906, A., i, 35.
- Ethylcyanoglycine**, ethyl ester (v. BRAUN), 1907, A., i, 900.
- Ethylcymene**. See Methylethylisopropylbenzene.
- 5-Ethylcytosine** and its additive salts (JOHNSON and MENGE), 1906, A., i, 986.
- Ethyldehydroapocamphoric acid** (KOMPFA and ROTALA), 1911, A., i, 381.
- Ethyldiallylcarbinol** (SAYTZEFF, PETROFF, MUSUROFF, CHOWANSKY, ANDRÉEFF, CHONOWSKY, and LUNIAK), 1907, A., i, 815.
- Ethyldiisouamylisocarbamide** (McKEE), 1909, A., i, 636.
- Ethyldiisobutylurethane**. See Diisobutylcarbamic acid, ethyl ester.
- Ethyl β -diethylaminoethyl ketone** and its semicarbazone and picrate and its reduction (BLAISE and MAIRE), 1903, A., i, 398.
- Ethyl β -diethylaminoethyl and β -piperidinoethyl ketones** (BLAISE and MAIRE), 1906, A., i, 142.
- Ethyldihydroanthracene**, nitration of (MEISENHEIMER and CONNERADE), 1904, A., i, 392.
- α -Ethyldihydroberberine** and its hydriodide (MERCK), 1907, A., i, 436; (FREUND and MAYER), 1907, A., i, 633.
- Ethyldihydrofuranone**, 3:4-dibromo- and -dichloro- (SIMONIS, MARBEN, and MERMOD), 1906, A., i, 32.
- Ethyldihydroisindole** (DAUBE), 1905, A., i, 210.
- Ethyldihydrophenanthranil**, hydroxy-, and its acetyl derivative (JAPP and KNOX), 1905, T., 682.
- 3-Ethyl-4-dihydroquinazolone** (BOGERT and GEIGER), 1912, A., i, 395.
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- 1-Ethyldihydroquinoline**, 4-cyano- (KAUFMANN and ALBERTINI), 1909, A., i, 958.
- 2-Ethyl-3:4-dihydroisouquinolinium**, 6:7-dihydroxy-, hydroxide, phenol betaine and derivatives of (PYMAN), 1910, T., 280.
- α -Ethyldihydrosorbic acid** (*octenoic acid*), β -hydroxy-, and its ethyl ester and salts (JAWORSKY and REFORMATSKY), 1903, A., i, 4; (JAWORSKY), 1903, A., i, 729.
- 4-Ethyl-3:4-dihydro-1:2:4:5-tetrazine-3:6-dicarboxylamide** (CURTIUS, DARAPSKY, and MÜLLER), 1909, A., i, 848.
- Ethyl- γ -dimethylaminopropyl ether** and its aurichloride (KNORR and ROTH), 1906, A., i, 458.
- p*-Ethyldiphenyliodonium hydroxide** and salts (WILLGERODT and BERGDOLT), 1903, A., i, 745.
- 4-Ethyldiphenylmethane-2'-carboxylic acid** (SCHOLL, POTTSCHWAUSCHEG, and LENKO), 1911, A., i, 1008.
- Ethyldi-*n*-propylamine** and its additive salts (COMANDUCCI and ARENA), 1908, A., i, 139.
- Ethyldipropylisocarbamide** (McKEE), 1909, A., i, 636.
- S*-Ethyl-*N*-dipropylidithiourethane**. See *N*-Dipropylidithiocarbamic acid, ethyl ester.
- Ethyldipropylurethane**. See Dipropylcarbamic acid, ethyl ester.
- Ethyldithiocarbamic acid**, chloromeric salt (ANSCHÜTZ), 1910, A., i, 158.

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s-dichloro- (*acetylene dichloride*), preparation of (TOMPKINS), 1908, A., i, 750; (LIDHOLM), 1908, A., i, 933; 1909, A., i, 198.
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 β -chloro- α -iodoso-, and its acetate and chromate, and β -chloro- α -iodoxy- (THIELE and HAAKH), 1909, A., i, 866.
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- Ethylene oxides**, formation of (FOURNEAU and TIFFENEAU), 1907, A., i, 818.
- hydrolysis of, by sulphuric acid (HENRY), 1907, A., i, 745.
- action of magnesium organic compounds on (FOURNEAU and TIFFENEAU), 1908, A., i, 163.
- aromatic (FOURNEAU and TIFFENEAU), 1906, A., i, 20.
- Ethyleneaniline**, interaction of, with thiocarbimides (DAVIS), 1906, T., 713; P., 114.
- aa'*-Ethylenebisiminodiphenylacetonitrile (SCHLESINGER), 1912, A., i, 556.
- aa'*-Ethylenebisiminophenylacetic acid and its derivatives (SCHLESINGER), 1912, A., i, 555.
- aa'*-Ethylenebisimino- α -phenylpropionic acid and its salts (SCHLESINGER), 1912, A., i, 555.
- aa'*-Ethylenebisiminopropionic acid and its derivatives (SCHLESINGER), 1912, A., i, 555.
- Ethylenebisiskairolinium iodide** and platinichloride (WEDEKIND), 1909, A., i, 184.
- 2-Ethylenebis-4-ketodihydroquinazoline** and its salts (KÖNIG), 1904, A., i, 297.
- Ethylenebismorpholine** and its salts (KNORR and BROWNSDON), 1903, A., i, 153.
- 5-Ethylenebis-1-phenyl-3-methylthiopyrazole** and its methobromide (MICHAELIS), 1904, A., i, 780.
- Ethylenebis-5-propylbarbituric acid** (REMFREY), 1911, T., 623; P., 73.
- Ethylenebistetrahydroquinoline** (WEDEKIND and OECHSLEN), 1903, A., i, 517.
- 2-Ethylenebistetrahydroisoquinolinium-2-acetic acid**, ethyl ester, iodide of, and its isomeride (WEDEKIND and OECHSLEN), 1903, A., i, 517.
- Ethylene-blue**. See Tetraethylthionine.
- Ethylenedi-bromo- and -chloro-diamines** and their *s*-diacyl derivatives (CHATTAWAY), 1905, T., 382; P., 61.
- Ethylenetetra-bromo- and -chlorodiamines** (CHATTAWAY), 1905, T., 381; P., 61.
- Ethylenecarbamide picrate** (KLUT), 1903, A., i, 327.
- Ethylenediamine**, synthesis of (NEUBERG and NEIMANN), 1905, A., i, 686.
- oxidation of (BAMBERGER and SELIGMANN), 1904, A., i, 18.
- tetra-acetyl derivative of (FRANCHIMONT and DUBSKY), 1911, A., i, 529.
- Ethylenediamine, s-diacyl derivatives of** (CHATTAWAY), 1905, T., 383; P., 61.
- compounds of, crystallographic properties of (FRANK), 1910, A., i, 302.
- compounds of, with cadmium salts (BARBIER), 1903, A., i, 403.
- perchlorate (HOFMANN, ROTH, HÖBOLD, and METZLER), 1910, A., i, 818.
- compounds of, with metallic dichromates (PARRAVANO and PASTA), 1907, A., i, 962.
- compounds of, with chromium salts (PFEIFFER, TRIESCHMANN, STERN, and PRADE), 1907, A., i, 895; (PFEIFFER and TILGNER), 1907, A., i, 1017; (PFEIFFER), 1908, A., i, 79; (PFEIFFER, PRADE, and STERN), 1908, A., i, 506; (PFEIFFER, VORSTER, and STERN), 1908, A., i, 507.
- compounds with chromium oxalate salts (PFEIFFER and TRIESCHMANN), 1906, A., i, 71; (PFEIFFER, BASCI, GASSMANN, HAIMANN, and TRIESCHMANN), 1906, A., ii, 615.
- chromate and chromium tetroxide (HOFMANN), 1906, A., i, 805.
- compounds of, with chromium and cobalt salts (PFEIFFER, GASSMANN, and PIETSCH), 1908, A., i, 508.
- compounds of, with cobalt salts (GERB), 1905, A., i, 328; (WERNER and JANTSCH), 1907, A., i, 188, 1012; (WERNER), 1907, A., i, 189; (WERNER, BERL, JANTSCH, and ZINGELER), 1907, A., i, 482.
- compounds of, with cobalt salts and thiocyanic acid and nitrites (WERNER), 1907, A., i, 291.
- compounds of, with cobaltammine salts (WERNER and GRÜN), 1906, A., i, 70; (WERNER, BRÄUNLICH, KRUTZER, and ROGOWINA), 1907, A., i, 290.
- compounds of, with cobalt and platinum (GROSSMANN and SCHÜCK), 1906, A., i, 485.
- cobalt thiocyanate, action of iodine on (PFEIFFER and TILGNER), 1908, A., i, 614.
- hydrochloride and ammonia, equilibrium of the system (BIDET), 1912, A., ii, 915.
- periodide (LINARIX), 1909, A., i, 769.
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- compounds of, with palladium (GUTBIER and WOERNLE), 1906, A., i, 805.
- compounds of, with platinum (JÖRGENSEN), 1906, A., i, 338.

- Ethylenediamine**, compounds of, with metallic thiocyanates (GROSSMANN and SCHÜCK), 1906, A., i, 629, 630.
- telluri-bromide and -chloride** (GUTBIER, FLURY, and EWALD), 1912, A., i, 689.
- Ethylenediaminephenylcarbimide** (LOEWY and NEUBERG), 1905, A., i, 158.
- Ethylenediammonium** double salts of metals, morphotropy of (ROSICKÝ), 1909, A., i, 458.
- auri-bromide and -chloride** (GUTBIER and OBERMAIER), 1911, A., i, 424.
- iridichloride** (GUTBIER and LINDNER), 1909, A., ii, 1026.
- and iridibromide** (GUTBIER and RIESS), 1910, A., i, 98.
- osmichloride** (GUTBIER and MAISCH), 1911, A., i, 19.
- platinibromide** (GUTBIER and BAUR-IEDEL), 1910, A., i, 13.
- selenibromide** (GUTBIER and GRÜNEWALD), 1912, A., i, 241.
- tungstate** (EKELEY), 1909, A., i, 556.
- 3:3'-Ethylenedibenzospiropyran** (BORSCH and GEYER), 1912, A., i, 893.
- Ethylenedicarboxylic acids**. See Fumaric acid and Maleic acid.
- Ethylenedifuramide** (BAUM), 1904, A., i, 910.
- Ethylenediguanide** and its additive salts (DITTLER), 1908, A., i, 924.
- $\alpha\alpha'$ -Ethylenedi-iminoisobutyric acid** and its ethyl ester, hydrochlorides of (SCHLESINGER), 1911, A., i, 427.
- $\alpha\alpha'$ -Ethylenedi-iminodisobutyric acid** and its copper salt (SCHLESINGER), 1911, A., i, 427.
- $\alpha\alpha'$ -Ethylenedi-iminodisobutyronitrile** hydrochloride (SCHLESINGER), 1911, A., i, 427.
- Ethylenedikairolinium** salts (WEDEKIND), 1904, A., i, 96.
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- Ethylenedi-methyl- and -ethyl-anilines**. See Diphenyl-dimethyl- and -diethylethylenediamines.
- Ethylenedimethylmalonylic acid**, $\alpha\beta$ -dinitroso-, methyl ester (PERKIN), 1903, T., 1221.
- 4:4''-Ethylenedioxybis-bromo- and -chloro-benzophenones** (v. KOSTANECKI, LAMPE, and MARSCHALK), 1907, A., i, 951.
- Ethylenedipiperidine** and its additive salts (KNORR, HÖRLEIN, and ROTH), 1905, A., i, 834.
- dibenzyl iodide** (DUNLOP), 1912, T., 2003.
- 3:3'-Ethylenedirhodanine** (NÄGELE), 1912, A., i, 795.
- Ethylene di-2-stilbenyl ether** (v. KOSTANECKI and TAMBOR), 1909, A., i, 225.
- Ethylenedisulphonyl chloride**, action of aromatic amines on (AUTENRIETH and KOBURGER), 1904, A., i, 34.
- Ethyleneditetrahydroquinoline** (WEDEKIND), 1904, A., i, 96.
- α -Ethylglutaconic acid**, *cis*- and *trans*-semianilides of (THOLE and THORPE), 1911, T., 2231.
- cis*- α -Ethylglutaconic acid** and its silver salt and anhydride (THOLE and THORPE), 1911, T., 2225.
- α -Ethylglutaconic anhydride**, semianilide of (THOLE and THORPE), 1911, T., 2233.
- $\alpha\alpha$ -Ethyleneglutaric acid** (FECHT), 1907, A., i, 906.
- Ethyleneglycolcarbonic acid**, calcium salt (SIEGFRIED and HOWWJANZ), 1909, A., i, 352.
- Ethyleneglycoloxide**, dithallium (CHABLAY), 1912, A., i, 528.
- Ethylene-green**. See Ethylene-blue, nitro-.
- Ethyleneguanidine**. See Tetrahydroglyoxaline, 2-imino-.
- Ethylenesulphonic acid**. See Vinylsulphonic acid.
- Ethylene-sulphur**, *tetraiodo*- (AUGER), 1908, A., i, 241.
- Ethylenetetracarboxylic acid** and its ethyl ester (SILBERRAD), 1904, T., 613; P., 61.
- Ethylenethiocarbamide**, preparation, properties, and desulphuration of (KLUT), 1903, A., i, 327.
- Ethylenethiolanthraquinone** (GATTERMANN), 1912, A., i, 999.
- Ethylenetoluidines**, interaction of, with thiocarbimides (DAVIS), 1906, T., 713; P., 114.
- Ethylenetricarboxylic acid**, methyl ester (ANSCHÜTZ and DESCHAUER), 1906, A., i, 728.
- Ethylenetricarboxylic acid**, cyano-, ethyl ester (SCHMITT), 1905, A., i, 508.
- Ethylenetrimethylenedipiperidylum bromide** and its stereoisomeride (ASCHAN), 1904, A., i, 350.
- Ethylenic compounds**, aromatic, polymerisation of (FRANCESCONI and PUXEDDU), 1909, A., i, 226.
- containing nitrogen** (BUSIGNIES), 1909, A., i, 736.
- stereoisomeric, transformation of** (PFEIFFER and LANGENBERG), 1910, A., i, 810.

- α -Ethylenic ketones, condensation of, with imines (MAYER), 1904, A., i, 832.
- Ethylerythric acid** (*ethylerythritic acid*) (LESPIEAU), 1905, A., i, 319, 406.
- β -Ethyl- α -ethyleno- α -ethoxybutane (BRUYLANTS), 1909, A., i, 228.
- Ethylethylideneimine** and its compound with hydrogen cyanide (HENRY), 1904, A., i, 854.
- 9-Ethylfluorene alcohol** (ULLMANN and V. WURSTEMBERGER), 1906, A., i, 77.
- β -Ethyl galactoside, synthesis of (BOURQUELOT and HÉRISSEY), 1912, A., i, 946.
- α -Ethylgeraniol (FARBENFABRIKEN VORM. F. BAYER & Co.), 1904, A., i, 842; 1905, A., i, 147.
- Ethylglaucophanic acid**, salts of (LIEBERMANN and TRUCHSÄSS), 1909, A., i, 405.
- Ethylglucoside**, α -amino- (IRVINE and HYND), 1912, P., 320.
- α' -Ethylglutaric acid, β -imino- α -cyano-, esters (BARON, REMFERY, and THORPE), 1904, T., 1757.
- β -Ethylglutaric acid and its anhydride, anilide, and nitrile (BLAISE and GAULT), 1907, A., i, 281.
- Ethylglutazine** and its carboxylic acid, ethyl ester, and oxime, and their dibenzoyl derivatives (BARON, REMFERY, and THORPE), 1904, T., 1758; P., 243.
- β -Ethylglycerol, $\alpha\gamma$ -diethyl ether (SOMMELET), 1907, A., i, 108.
- Ethylglycollic acid**, glucinum salt (GLASMANN and NOVICKY), 1908, A., i, 121.
- 1-Ethylglyoxaline**, 2:4:5-triiodo- (PAULY), 1910, A., i, 639.
- 4-Ethylglyoxaline** and its salts, and 2-mercaptan and 2-hydroxy- (KOLSHORN), 1904, A., i, 675.
- 4-Ethylglyoxaline**, β -amino-(*iminazolyethylamine*), and other active principles of ergot (BARGER and DALE), 1910, T., 2592; P., 327; A., ii, 736.
- and its salts (PYMAN), 1912, T., 543; P., 48.
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- Physiological action of (DALE and LAIDLAW), 1911, A., ii, 137, 1017; (BARGER and DALE), 1911, A., ii, 217.
- 4-Ethylglyoxaline**, β -amino-, and an ergot base, physiological actions of (ACKERMANN and KUTSCHER), 1910, A., ii, 881.
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- β -hydroxy-, and its salts (WINDAUS and OPITZ), 1911, A., i, 753.
- α -Ethyl- β -glyoxaline-4(or 5)-propionic acid, β -hydroxy-, lactone of, and its salts (PYMAN), 1912, T., 587; P., 47.
- Ethyl groups**, twin, pharmacological significance of (FRÄNKEL), 1908, A., ii, 1060.
- Ethyl heptadecyl ketone** (RYAN and NOLAN), 1912, A., i, 749.
- Ethylcycloheptane**. See Ethylsuberane.
- γ -Ethylheptan- δ -ol and its oxime (ZERNER), 1911, A., i, 950.
- δ -Ethylheptan- ϵ -onoic acid, ethyl ester (BLAISE and KOEHLER), 1909, A., i, 478.
- 5-Ethylhexahydropyrimidine**, 4:6-dimino-2-thio- (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.
- 2:4:6-triimido- (MERCK), 1906, A., i, 537.
- α -Ethylisohexaldehyde and its semicarbazone (SOMMELET), 1907, A., i, 108.
- γ -Ethylhexane, and γ -iodo- (CLARKE and RIEGEL), 1912, A., i, 405.
- Ethylcyclohexane**, β -amino-, and its additive salts, carbamide, and trimethylammonium iodide (WALLACH), 1907, A., i, 617.
- γ -Ethylhexan- β -ol (CLARKE and RIEGEL), 1912, A., i, 405.
- γ -Ethylhexan- γ -ol (CLARKE and RIEGEL), 1912, A., i, 405.
- γ -Ethylhexan- β -one (CLARKE and RIEGEL), 1912, A., i, 405.
- γ -Ethylhexan- δ -one, γ -hydroxy- (BLAISE and MAIRE), 1909, A., i, 85.
- 2-Ethylcyclohexanone** and its acetyl derivative (LÉSER), 1912, A., i, 778.
- and its semicarbazone (BOUVEAULT and CHEREAU), 1906, A., i, 513.
- γ -Ethyl- $\Delta\beta$ -hexene (CLARKE and RIEGEL), 1912, A., i, 405.
- Ethyl- Δ^1 -cyclohexene** and its nitroschloride and nitropiperidide (WALLACH and MENDELSSOHN-BARTHOLDY), 1908, A., i, 404.

- Ethylhexenol** (SAND and SINGER), 1904, A., i, 23.
- 1-Ethyl- Δ^2 -cyclohexen-3-one** and its oxime and semicarbazone, and **4-carboxylic acid**, ethyl ester, and its semicarbazone (BLAISE and MAIRE), 1908, A., i, 391.
- 3-Ethyl- Δ^2 -cyclohexenone** and its 6-acetyl derivative and **6-carboxylic acid**, ethyl ester (BLAISE and MAIRE), 1907, A., i, 418.
- α -Ethylhexoic acid**, synthesis of (RAPER), 1907, T., 1837.
- Ethyl- n -hexylcarbinol** and its acetate (GÉRARD), 1907, A., i, 376.
- d-Ethyl- n -hexylcarbinol** and its hydrogen phthalate and brucine salt of the latter (PICKARD and KENYON), 1911, T., 60.
- l-Ethyl- n -hexylcarbinol** and hydrogen phthalate of, and its cinchonidine salt (PICKARD and KENYON), 1911, T., 61.
- Ethylisohexyl ether** (BLAISE and PICARD), 1912, A., i, 232.
- Ethyl- β -homocamphoric acid** (MINGUIN), 1904, A., i, 330.
- Ethylhomonarcaine** (TAMBACH and JAEGER), 1906, A., i, 880.
- N-Ethylhomopapaverinium derivatives** (DECKER and DUNANT), 1908, A., i, 206.
- Ethylhydantoic acid** (BAILEY and RANDOLPH), 1908, A., i, 741.
- α -Ethyl-hydantoic acid** and **-hydantoin** (GABRIEL), 1906, A., i, 636.
- α -Ethylhydantoin** (KOENIGS and MYLO), 1909, A., i, 87.
- ϵ -Ethylhydantoin** and **β -nitro-** (HARRIES and WEISS), 1903, A., i, 739.
- α -Ethylhydraacrylic acid** and its salts, ethyl ester, phenylhydrazine, and phenylurethane (BLAISE and LUTTINGER), 1905, A., i, 505.
- Ethylhydrazine**, **β -hydroxy-**, and its formaldehyde derivative (BARNETT), 1912, P., 259.
- 1-Ethylhydrocotarnine** and its additive salts and **5-bromo-derivative**, and its oxidation (FREUND and REITZ), 1906, A., i, 600.
- α -Ethylhydrohydrastinine** (FREUND and LEDERER), 1911, A., i, 906.
- 5-Ethylhydrouracil** (TAFEL and THOMPSON), 1908, A., i, 58.
- Ethylhydroxyazaurolic acid** (WIELAND), 1907, A., i, 494.
- Ethyl hydroxy-*sec*-butyl ketone** (BLAISE and HERMAN), 1910, A., i, 534.
- Ethyl hydroxy-*tert*-butyl ketone** and its acetyl derivative (BLAISE and HERMAN), 1908, A., i, 248.
- Ethyl hydroxy-*tert*-butyl ketone oxime**, phenylhydrazone, semicarbazone, and phenylurethane (BLAISE and HERMAN), 1909, A., i, 632.
- 1-Ethyl-2- β -hydroxyethylpiperidine** and its bromo-derivative and platinum-chloride (LÖFFLER and GROSSE), 1907, A., i, 440.
- N-Ethyl-*o*-hydroxylaminobenzoic acid** (BAMBERGER and PYMAN), 1909, A., i, 574.
- 3-Ethyl-4-hydroxyquinazoline-2-phthalone** (BOGERT and HEIDELBERGER), 1912, A., i, 216.
- Ethylidene dibenzoate** (WEGSCHEIDER and SPÄTH), 1910, A., i, 156.
- Ethylideneacetacetic acid**, ethyl ester, semicarbazide-semicarbazone of (RUPE and HINTERLACH), 1908, A., i, 13.
- Ethylideneacetacetic acid**, chloro-, ethyl ester (PLANCHER and ALBINI), 1904, A., i, 334.
- Ethylidene-acetoacetic and -bisacetoacetic acids**, menthyl esters, rotation of (HANN and LAPWORTH), 1904, T., 50.
- Ethylideneacetone** ($\Delta\beta$ -penten- δ -one), action of organo-magnesium haloids on (GRY), 1908, A., i, 307.
- Ethylideneacetonesemicarbazide-semicarbazone** (RUPE and HINTERLACH), 1908, A., i, 13.
- Ethylidene-*o*-aminobenzoic acid**, trichloro-. See Chloralanthranilic acid.
- Ethylideneaminophenylcyanamide** (ROLLA), 1907, A., i, 875.
- Ethylideneanil**, **β -nitro-**, and its *p*-chloro- and *p*-nitro-derivatives (MEISTER), 1907, A., i, 886.
- Ethylideneanthranilic acid**, trichloro-, action of phenylhydrazine and semicarbazide on (GÄRTNER), 1904, A., i, 788.
- trichlorodinitro-** (v. NIEMENTOWSKI), 1903, A., i, 91.
- Ethylidenebisacetylacetone** (KNOEVENAGEL), 1903, A., i, 638.
- 3-Ethylidenebis-4-hydroxycoumarin** (ANSCHÜTZ), 1903, A., i, 271.
- Ethylidenebis-4-hydroxy-7-methylcoumarin** (ANSCHÜTZ, WAGNER, and JUNKERSDORF), 1909, A., i, 664.
- 4-Ethylidenebis-3-methyl-5-isooxazolone** (RABE and ELZE), 1904, A., i, 749.
- Ethylidenebisoxalacetic acid**, ethyl ester, and its phenylhydrazone, semicarbazone, and hydrate, and dianhydride (GAULT), 1907, A., i, 181.
- Ethylidenecamphor** (MINGUIN), 1904, A., i, 330.

- Ethylidenedi-*p*-aminoacetophenone**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 674.
- Ethylidenedi-*m-* and -*p*-aminobenzoic acids**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-5-bromo-2-aminobenzoic acid**, *tri-chloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*m*-bromoaniline**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*p*-bromoaniline**, *trichloro-*, and its bromo- and chloro-derivatives (WHEELER and MILLER), 1908, A., i, 332.
- Ethylidenedi-4-bromo-1-naphthylamine**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 674.
- Ethylidenedi-*p*-bromo-*o*- and -*m*-nitroaniline**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*m*-chloro-*p*-toluidine**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*p*-iodoaniline**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedimalonic acid**, *trichloro-*, ethyl ester (KÖTZ), 1907, A., i, 707.
- Ethylidenedi-*o*- and -*p*-methoxyphenylamines**, *trichloro-*, and their bromo-compounds (WHEELER and DICKSON), 1908, A., i, 333.
- Ethylidenedi-*o*-, -*m*-, and -*p*-nitroanilines**, *trichloro-* (WHEELER and WELLER), 1903, A., i, 246.
- Ethylidenedi-*p*-nitro-*o*-toluidine**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*o*- and -*m*-nitro-*p*-toluidine**, *trichloro-* (WHEELER and JORDAN), 1909, A., i, 673.
- Ethylidenedi-*o*-tolylamine**, *trichloro-*, and its bromo-derivative (WHEELER and JORDAN), 1908, A., i, 333.
- Ethylidenediurethane**, *tribromo-* (DIELS and OCHS), 1908, A., i, 10.
- 9-Ethylidenefluorene** (ÜLLMANN and V. WURSTEMBERGER), 1906, A., i, 77.
- Ethylidenecyclohexane**. See *cyclo-Hexene-ethane*.
- α -Ethylidenehydantoin**, bromo- (GABRIEL), 1906, A., i, 636.
- Ethylidenehydrazine**, benzoyl derivative (STOLLÉ and MÜNCH), 1905, A., i, 94.
- Ethylideneimine**, action of hydrogen cyanide on (DELÉPINE), 1904, A., i, 20.
- trimeric, and its trinitroso-derivative (DELÉPINE), 1907, A., i, 484.
- Ethylideneiminosulphonic acid**, barium salt (CHEMISCHE FABRIK VON HEYDEN), 1909, A., i, 704.
- α -Ethylidenelactic acid**. See Lactic acid.
- Ethylidenecyclopentane** and its nitroso-chloride (WALLACH and V. MARTIUS), 1909, A., i, 385.
- Ethylidenephosphamic acid**, chloro-bromo-compounds, derivatives of (STEINKOPF, GRÜNUPP, and KIRCHHOFF), 1908, A., i, 962.
- Ethylidenephthalide** and nitro- (DAUBE), 1905, A., i, 210.
- oxime (LAPWORTH and STEELE), 1911, T., 1883.
- Ethylidenepropionic acid**, esterification constant of (SUDBOROUGH and THOMAS), 1907, T., 1036; P., 146.
- syn*-**Ethylidenesalicylamide** (HICKS), 1910, T., 1034; P., 91.
- Ethyliminobisacetoneitrile** (KNOEVENAGEL and MERCKLIN), 1904, A., i, 982.
- C*-Ethyliminodiacetic acid**, diethyl ester, and its nitroso-derivative and their refractions (STADNIKOFF), 1909, A., ii, 843.
- 5-Ethylimino-1:1-dimethylcyclohexan-3-one**, 4-oximino- (HAAS), 1909, T., 423.
- 5-Ethylimino-1:1-dimethyl- Δ^3 -cyclohexen-3-ol** and its salts (HAAS), 1909, T., 422.
- β -Ethyliminodipropaldehyde** tetraethylacetal and its platinichloride (WOHL, HERTZBERG, and LOSANITSCH), 1906, A., i, 106.
- Ethyliminocycloheptanecarboxylic acid**, cyano-, ethyl ester, hydrochloride of (STADNIKOFF), 1908, A., i, 266.
- 3-Ethyliminoisatin** and its reactions (HASLINGER), 1908, A., i, 454.
- and 5-*mono*- and 5:7-*di*-bromo- and 5:7-*dichloro-* (HASLINGER), 1907, A., i, 976.
- 5-Ethylimino-1-phenyl-2:3-dimethylpyrazolone** and its picrate (STOLZ), 1904, A., i, 114.
- Ethyliminopyrine-4-azobenzene** and its platinichloride (MICHAELIS and KLOPSTOCK), 1907, A., i, 736.
- Ethyliminothiolecarbonyl acid**, dimethyl ester, and its picrate (DELÉPINE), 1910, A., i, 613.
- 1-Ethyl-1-indenol**, 2:3-*di*bromo-, and its acetyl derivative (SIMONIS and KIRSCHTEN), 1912, A., i, 271.
- 3-Ethylindole** and its picrate (PLANCHER and CARRASCO), 1905, A., i, 719.
- 3-Ethylindole**, β -amino-, and its salts and derivatives (EWINS), 1911, T., 270; P., 20.

- 3-Ethylindole**, β -amino-, syntheses of (EWINS and LAIDLAW), 1910, P., 343.
 physiological action of (LAIDLAW), 1911, A., ii, 1120.
- Ethylisoindolone** (BÉIS), 1904, A., i, 503.
- Ethyl- ψ -ionone** and its hydrate (COULIN), 1904, A., i, 678.
- α -Ethylitaconic acid** and anhydride (FICHTER and SCHLAEPFER), 1906, A., i, 399.
- Ethylisokairolinium**, hydroxy-, platinichloride, and bromo-, bromide and iodide (WEDEKIND), 1909, A., i, 184.
- Ethylketenecarboxylic acid**, ethyl ester (STAUDINGER and BEREZA), 1910, A., i, 89.
- Ethyl ketones**, β -chloro-, condensations of (BLAISE and MAIRE), 1907, A., i, 142, 418.
 reactions of (MAIRE), 1908, A., i, 247; (BLAISE and MAIRE), 1908, A., i, 390.
 action of nitrogen-containing reagents on the carbonyl group of (MAIRE), 1908, A., i, 290.
- α -Ethyl-lacturamic acid** (GABRIEL), 1906, A., i, 636.
- β -Ethylmalic acid** and its ethyl ester, anil, and anilide (FICHTER and GOLDBABER), 1904, A., i, 648.
 and its salts (DOEBNER and SEGELITZ), 1905, A., i, 737.
- Ethylmalonamide** (CONRAD and SCHULZE), 1909, A., i, 213.
- Ethylmalonic acid** and bromo-, esters of (BISCHOFF), 1907, A., i, 773.
 and bromo-, chlorides of ethyl esters, and anilide (STAUDINGER and BEREZA), 1910, A., i, 90.
 ethyl ester, sodium derivative, action of, on ethyl chloroacetate (MICHAEL), 1905, A., i, 856.
- Ethylmalonylbenzidine** (REMFY), 1911, T., 622.
- Ethylmalonylbishydrazoneacetoacetic acid**, ethyl ester (BÜLOW and BOZENHARDT), 1910, A., i, 103.
- Ethylmalonylcarbamide**, ethyl ester (BOEHRINGER & SÖHNE), 1908, A., i, 464.
- Ethylmalonyldihydrazide** (BÜLOW and BOZENHARDT), 1910, A., i, 103.
- Ethylmeconine** (MERMOD and SIMONIS), 1906, A., i, 303.
- α -Ethylmeconine**, amino-, and its additive salts, bromo-, and nitro- (MERMOD and SIMONIS), 1908, A., i, 343.
- 2-Ethyl- $\Delta^{6:8(9)}$ -menthadien-2-ol** and - $\Delta^{2:8(9)}$ -menthatriene (KLAGES and SOMMER), 1906, A., i, 567.
- 2-Ethylmenthatriene**, optical constants of (KLAGES), 1907, A., i, 598.
- N*- β -Ethylmercaptophthalamic acid**, and its anhydride, salts and derivatives (GABRIEL and COLMAN), 1912, A., i, 529.
- Ethylmercaptophthalmethylamic acid** and its anhydride, salts of (GABRIEL and COLMAN), 1912, A., i, 530.
- N*-Ethylmeroquinene** and its derivatives (KOENIGS, BERNHARDT, and IBELE), 1906, A., i, 763.
 and its nitrile (RABE and RITTER), 1907, A., i, 78.
- Ethylmesaconic acid**, oxidation of (FITTIG and DANNENBERG), 1904, A., i, 555.
- Ethylmethylisoolivil** (KÖRNER and VANZETTI), 1912, A., i, 353.
- Ethylmethyl-**. See also Methyl-ethyl-.
- α -Ethyl- β -1-methylglyoxaline-4(or 5)-propionic acid**, β -hydroxy-, lactone of, and its pterate (PYMAN), 1912, T., 538.
- Ethylmorphine** and its hydrochloride, melting points and solubilities of (SCHAEFER), 1912, A., i, 797.
 periodide (LINARIX), 1909, A., i, 769.
- 1-Ethyl-naphthalene**, 2:4-diamino-, and its 3-carboxylic acid and its ethyl ester and their additive salts (ATKINSON and THORPE), 1906, T., 1928; P., 282.
- Ethyl-naphthalenes**, α - and β -, preparation of (DARZENS and ROST), 1908, A., i, 411.
- Ethyl- α -naphthylamine**, 4-bromo-2-nitro- (MELDOLA and LANE), 1904, T., 1605.
 2:4-dinitro- (MELDOLA), 1906, T., 1435; P., 245.
- Ethyl- α - and - β -naphthylamines**, evaluation of (VAUBEL), 1903, A., ii, 395.
- Ethyl-narceine** and its ethyl ester and their salts (TAMBACH and JAEGER), 1906, A., i, 879.
 ethiodide (KNOLL & Co.), 1907, A., i, 1070.
 hydrochloride (KNOLL & Co.), 1907, A., i, 958.
- 1-Ethyl-nipecotinic acid** (1-ethylpiperidine-3-carboxylic acid) (WOHL and LOSANITSCH), 1908, A., i, 50.
- 4-Ethyl-nitro- and -nitroso-aminobenzoic acids**, 3:5-dinitro-, and their ethyl esters (REVERDIN and DE LUO), 1909, A., i, 477.
- Ethylnitrobenzamide** (SLOSSON), 1903, A., i, 476.

- Ethylnitrolic acid**, coloured and colourless salts of (HANTZSCH and KANASIRSKI), 1909, A., i, 281.
- 4- and 6-Ethylnitrosoamino-*m*-toluic acid** (HOUBEN, SCHOTTMÜLLER, and FREUND), 1910, A., i, 35.
- Ethylnitrosolic acid** (WIELAND), 1907, A., i, 494.
- β -Ethylnonoic acid** and α -hydroxy-, and its ethyl ester (BAGARD), 1907, A., i, 477.
- Ethylnopinol** (WALLACH), 1907, A., i, 1059.
- N*-Ethylorpapaverinium derivatives** (DECKER and DUNANT), 1908, A., i, 205.
- α -Ethyl-octaldehyde** and its oxime and semicarbazone (BAGARD), 1907, A., i, 477.
- Ethyl octyl ketone**, formation of, from methyl nonyl ketone, and its oxime and semicarbazone (MANNICH), 1903, A., i, 679.
- 2-Ethylol-1:4-dimethylbenzene**. See *p*-Xylylmethylcarbinol.
- Ethylolivil** (KÖRNER and VANZETTI), 1912, A., i, 352.
- Ethylisoolivil** (KÖRNER and VANZETTI), 1912, A., i, 353.
- 5-Ethylol-1:2:4-trimethylbenzene**. See 2:4:6-Triethylphenylmethylcarbinol.
- Ethylloxaluric acid** (HOEBEL), 1907, A., i, 558.
- α -Ethylloxalylamino- α -phenylacetamide** (CLARKE and FRANCIS), 1911, T., 324.
- Ethylloxalylaniline-*N*-carboxylic acid**, ethyl ester (DIELS and NAWIASKY), 1904, A., i, 981.
- Ethylloxalylanthranil** (BOGERT and GORTNER), 1910, A., i, 284.
- Ethylloxamic acid**, bromo-, ethyl ester (GABRIEL), 1905, A., i, 651.
- 3-Ethylisooxazoline** and its platinum derivative (MAIRE), 1908, A., i, 290.
- N*-Ethylisopapaverine** and its picrate (DECKER and KLAUSER), 1904, A., i, 338; (DECKER and HOCK), 1904, A., i, 620.
- β -Ethylpentane**, physical properties of (MARCKWALD), 1904, A., i, 363.
- γ -Ethylpentane, γ -chloro-** (SCHREINER), 1910, A., i, 661.
- γ -Ethylpentane- $\beta\gamma$ -diol** (GAUTHIER), 1911, A., i, 415.
- γ -Ethylpentane- $\beta\beta\alpha'$ -tricarboxylic acid**, esters and salts (SOKOLOWSKY), 1906, A., i, 138.
- 1-Ethylcyclopentan-1-ol** (WALLACH and V. MARTIUS), 1909, A., i, 385.
- 2-Ethylcyclopentan-1-one**, and 2-cyano-, and their semicarbazones (BEST and THORPE), 1909, T., 713; P., 93.
- 1-Ethyl- Δ^1 -cyclopentene** and its nitrosochloride and oxime (WALLACH and V. MARTIUS), 1909, A., i, 385.
- α -Ethyl- $\Delta\beta$ -pentenoic acid** and its barium salt (FICHTER and OBLADEN), 1910, A., i, 87.
- β -Ethyl- $\Delta\alpha$ -pentenoic acid**, transformation of, into β -ethylvalerolactone, and ethyl ester and toluidide of (FICHTER, KIEFER, and BERNOULLI), 1910, A., i, 88.
- 1-Ethyl- Δ^1 -cyclopenten-2-one** (WALLACH and V. MARTIUS), 1909, A., i, 385.
- 2-Ethylperimidine** and its salts (SACHS), 1909, A., i, 427.
- β -Ethylphenacylacetic acid** and its ethyl ester, phenylhydrazine, and dibromoderivative (EYKMAN), 1904, A., i, 590.
- α -Ethylphenacylmalonic acid** and its diphenylhydrazine salt (EYKMAN), 1904, A., i, 591.
- β -Ethylphenacylmalonic acid** and its ethyl ester (EYKMAN), 1904, A., i, 590.
- 9-Ethylphenanthrene** and its picrate (PSCHORR), 1906, A., i, 820.
- and *aa*-dichloro- (WILLGERODT and ALBERT), 1911, A., i, 882.
- Ethylphenanthrenes, α - and β -** (PSCHORR and KARO), 1906, A., i, 879.
- p*-Ethylphenetole** and its sulphonic acid and its amide (KLAGES and EPELSHEIM), 1904, A., i, 46.
- o*-Ethylphenol, β -amino-**. See β -Phenylethylamine, hydroxy-.
- p*-Ethylphenol, tri- and tetra-bromo-**, action of nitric acid on (ZINCKE and REINBACH), 1905, A., i, 882.
- 2:3(or 2:5)-dibromo-5(or 3)-nitro-**, and its acetate (ZINCKE and HENKE), 1909, A., i, 24.
- β -chloro-** (V. BRAUN and GAWRILOW), 1912, A., i, 498.
- o*-Ethylphenyl methoxymethyl ether, α -hydroxy-** (HOERING and BAUM), 1909, A., i, 571.
- p*-Ethylphenylacetaldehyde** and its semicarbazone (AUWERS), 1906, A., i, 963.
- p*-Ethylphenylbenzylidenehydrazine** (WILLGERODT and HARTER), 1905, A., i, 552.
- p*-Ethylphenyl α -bromopropyl ketone** (KUNCKELL), 1912, A., i, 432.
- α -*p*-Ethylphenyl- $\Delta\alpha$ -butylene**, and its dibromide and α -chloro- β -bromo- (KUNCKELL), 1912, A., i, 432.

- p*-Ethylphenyldichloroethylidinium salts (WILLGERODT and BERGDOLT), 1903, A., i, 746.
- p*-Ethylphenylglyoxylic acid, and its ethyl ester (FOURNIER), 1903, A., i, 347.
- p*-Ethylphenylhydrazine and its additive salts (WILLGERODT and HARTE), 1905, A., i, 551.
- p*-Ethylphenyl- α -naphthylidinium hydroxide and salts (WILLGERODT and BERGDOLT), 1903, A., i, 746.
- p*-Ethylphenyltolylidenehydrazine (WILLGERODT and HARTE), 1905, A., i, 552.
- p*-Ethylphenyl-*o*-tolylidinium hydroxide and salts (WILLGERODT and BERGDOLT), 1903, A., i, 746.
- Ethylphthalamic acid, β -bromo- (GABRIEL), 1905, A., i, 650.
- Ethylphthalamic anhydride, β -hydroxy-, and its additive salts (GABRIEL), 1905, A., i, 650.
- 1-Ethylphthalazine, 4-chloro-, and 1-Ethylphthalazone (DAUBE), 1905, A., i, 210.
- Ethylphthalimide, β -bromo-, nitroso-amine from (GABRIEL), 1905, A., i, 651.
- Ethylphthalimidine (DAUBE), 1905, A., i, 210.
- 10-Ethylphthaloperine, 10-hydroxy- (SACHS), 1909, A., i, 430.
- 1-Ethyl- β -pipecoline, ω -amino- (3-aminomethyl-1-ethylpiperidine) and its additive salts (WOHL and LOSANITSCH), 1903, A., i, 50.
- 1-Ethyl-2- and -3-pipecolines and their resolution (SCHOLTZ), 1908, A., i, 679.
- 1-Ethylpiperidine, β -chloro-, action of heat on (DUNLOP), 1912, T., 2000; P., 280.
- α -hydroxy-, alkamine esters of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1906, A., i, 846, 847.
- β -iodo-, hydriodide (DUNLOP), 1912, T., 2002.
- 2-Ethylpiperidine, amino-, and its additive salts (LÖFFLER and KIRSCHNER), 1905, A., i, 939.
- 3-Ethylpiperidine, dibromo-, hydrobromide of, and nitroso- (KOENIGS, BERNHART, and IBELE), 1907, A., i, 791.
- 4-Ethylpiperidine, 4- β -hydroxy-, and its salts (LÖFFLER and STIETZEL), 1909, A., i, 182.
- 1-Ethylpiperidine-3-aldehyde and its platinichloride (WOHL and LOSANITSCH), 1906, A., i, 107.
- diethylacetal and 4-chloro- (WOHL, HERTZBERG, and LOSANITSCH), 1906, A., i, 106.
- 1-Ethylpiperidine-3-carboxylic acid. See 1-Ethylnipecotinic acid.
- Ethyl- β -piperidinoethyl ketone and its oxime, semicarbazone, picrate, and platinichloride (BLAISE and MAIRE), 1908, A., i, 398.
- α -Ethylpiperidylalkaline, optically active (*conhydrine*), constitution of (LÖFFLER and TSCHUNKE), 1909, A., i, 324.
- Ethylpiperonyl alcohol (MAMELI), 1904, A., i, 1023.
- Ethylpiperonyl ether (MAMELI), 1905, A., i, 203.
- Ethylpiperonylcarbinol and its acetyl derivative (MAMELI), 1904, A., i, 1023.
- benzoyl derivative (MAMELI), 1905, A., i, 203.
- Ethylpivalic acid. See α -Dimethylvaleric acid.
- β -Ethylpropane, α -chloro- γ -hydroxy- (HENRY), 1907, A., i, 887.
- 3-Ethylcyclopropane-1:2-di- and -1:1:2:2-tetra-carboxylic acids and their ethyl esters and silver salts (KÖTZ), 1907, A., i, 706.
- p*- α -Ethylpropenylanisole (KLAGES), 1904, A., i, 1004.
- α -Ethylpropenylbenzene. See γ -Phenyl- $\Delta\beta$ -amylene.
- α -Ethylpropionic acid. See α -Methylbutyric acid.
- Ethylisopropyl. See Amyl.
- Ethylpropylacetic acid. See α -Ethylvaleric acid.
- Ethylisopropylacetoacetic acid, ethyl ester (CLARKE), 1908, A., i, 493.
- Ethylisopropylacetone. See γ -isoPropyl- β -pentanone.
- Ethylpropylacetophenone (DUMESNIL), 1911, A., i, 719.
- α -Ethyl- β -propylacraldehyde (GORHAN), 1905, A., i, 171.
- β -Ethyl- α -propylacrylic acid and its salts (CRICHTON), 1906, T., 930; P., 162.
- Ethyl-*n*-propylamine and its additive salts and nitroso-derivative (COMANUCCI and ARENA), 1908, A., i, 139.
- Ethyl- β -propylaminoethyl ketone and its phenylcarbamide (BLAISE and MAIRE), 1908, A., i, 398.
- Ethylpropylaniline, 2:4-dinitro- and Ethylisopropylaniline, 2:4:6-trinitro-, synthesis of (MULDER), 1906, A., i, 491.
- 5-Ethyl-5-propylbarbituric acid (5-ethyl-5-propylmalonylcarbamide), 4-imino- (CONRAD), 1905, A., i, 752.
- α -Ethylpropylbenzene. See Phenyl-diethylmethane.

- 3-Ethyl-2-propylbenzopyranol** (DECKER and v. FELLEBERG), 1909, A., i, 117.
- 3-Ethyl-2-propylbenzopyronium** ferrichloride (DECKER and v. FELLEBERG), 1909, A., i, 117.
- Ethylpropylisobutylamine**, preparation of, and its platinichloride (POPE and READ), 1912, T., 523; P., 50.
- d*-**Ethylisopropylcarbinol** and its derivatives (PICKARD and KENYON), 1911, P., 324; 1912, T., 632.
- Ethyl propyl diketone** (*propionylbutyryl*) and its dioxime (LOCQUIN), 1905, A., i, 20.
oxime of (LOCQUIN), 1905, A., i, 19.
- Ethyl propyl ether**, β -chloro- (GAUTHIER), 1909, A., i, 354.
 β -iodo- (KARVONEN), 1909, A., i, 202.
- Ethyl propyl ketone**, β -chloro- (BLAISE and MAIRE), 1906, A., i, 142.
- Ethylisopropyl ketone** and its oxime from the aldol $C_8H_{14}O_2$ (MUNK), 1905, A., i, 560.
semicarbazone (BLAISE and HERMAN), 1909, A., i, 633.
- Ethylpropylmalonic acid** and its esters and salts (RASETTI), 1905, A., i, 562.
- α -**Ethylpropylmalonic acid**, ethyl ester (REYNOLDS), 1910, A., i, 858.
- 5-Ethyl-5-propylmalonylguanidine** and 4-imino- (CONRAD), 1905, A., i, 752.
- Ethylpropylsilicane**, dichloro- (BYGDEN), 1911, A., i, 846.
- Ethylpropylstannic chloride** (SMITH and KIPPING), 1912, T., 2563; P., 314.
- Ethylpropylsuccinic acids**, *s*- and *as*- (FICHTER and KAPPELER), 1908, A., i, 660.
- Ethylisopropylsuccinic acids**, isomeric, and their calcium salts (FICHTER and GLASER), 1908, A., i, 660.
- 4-Ethylpyran-2:6-dicarboxylic acid** and its methyl ester (BLAISE and GAULT), 1907, A., i, 333.
- 3-Ethylpyrazoline** and its picrate and phenylcarbamide (MAIRE), 1908, A., i, 290.
- 2-Ethylpyridine**, β -amino-, and its additive salts and acetyl derivative (LÖFFLER), 1904, A., i, 265.
 β -hydroxy- (*2-picolytalkine*), and its derivatives (LÖFFLER), 1904, A., i, 265, 616.
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- 3-Ethylpyridine**, formation of, by Ladenburg's reaction, and its salts (TSCHITSCHIBABIN), 1903, A., i, 853.
gold salts (ECHSNER DE CONINCK), 1904, A., i, 342.
- 4-Ethylpyridine**, β -hydroxy- (*4-picolytalkine*) and its pyridonium isomeride (LÖFFLER and STIETZEL), 1909, A., i, 181.
- Ethylpyridinium salts** (FERNS and LAPWORTH), 1912, T., 281.
- 3-Ethyl- α -pyrone**, 6-chloro-, and 6-hydroxy- (THOLE and THORPE), 1911, T., 2227.
- 1-Ethylpyrrolidine** and its salts (v. BRAUN), 1911, A., i, 563.
- Ethylpyruvic acid** and its salts and phenylhydrazone (FITTIG and DANENBERG), 1904, A., i, 555.
- 2-Ethylquinazoline**, tetrachloro- (BOGERT and MAY), 1909, A., i, 330.
- Ethylquinic acid**, ethyl ester (KNÖFFER), 1907, A., i, 423.
- Ethylquinol**, tribromo-, and its diacetyl derivative (ZINCKE and REINBACH), 1905, A., i, 882.
- Ethyl- ψ -quinol**, 2:3:5-*tri*- and 2:3:5-*tetra*-bromo-, and their acetyl derivatives (ZINCKE and REINBACH), 1905, A., i, 882.
- 4-Ethylquinoline** and its additive salts (BLAISE and MAIRE), 1908, A., i, 566, 567.
synthesis of (BLAISE and MAIRE), 1907, A., i, 241.
- 4-Ethylisoquinoline**, 1-chloro-4-hydroxy-, and its methyl ether (ULRICH), 1904, A., i, 529.
- 1-Ethyl-2-quinolone**, 5-amino-, and its hydrochloride (DECKER and ENGLER), 1909, A., i, 512.
- 5-chloro-6-hydroxy-** (HOWITZ and BÄRLOCHER), 1905, A., i, 375; (HOWITZ and WITTE), 1905, A., i, 470.
- 4-cyano-** (KAUFMANN and ALBERTINI), 1909, A., i, 958.
- 6-hydroxy-** (HOWITZ and BÄRLOCHER), 1903, A., i, 279.
- 8-hydroxy-** (DECKER and ENGLER), 1903, A., i, 518.
- 8-nitro-** (DECKER and STAVROPOULOS), 1903, A., i, 719; (DECKER, GADOMSKA, SANDBERG, and STAVROPOULOS), 1905, A., i, 374.
- 1-Ethylquinolylene-4(2')-quinaldine** ethiodide, salts and derivatives of (KAUFMANN and VONDERWAHL), 1912, A., i, 503.
- Ethylquinone**. See Ethylbenzoquinone.
- 3-Ethylquinoxaline**, 2-acetyl derivative (SACHS, HEROLD, and ALSLEBEN), 1907, A., i, 629.
- 2-Ethylquinoxaline-3-carboxylic acid**, ethyl ester (WAHL and DOLL), 1912, A., i, 536.

- 3-Ethylquinuclidine** (KOENIGS and BERNHART), 1905, A., i, 825.
and its salts and isomeride (KOENIGS), 1904, A., i, 925.
- β' -Ethylquinuclidine, α -oximino-** (RABE, KULIGA, and NAUMANN), 1909, A., i, 407.
- Ethyl-red** (MIETHE and BOOK), 1904, A., i, 622.
and its methiodide, formula of (VON-GERICHTEN and HÖFCHEN), 1908, A., i, 914.
- Ethylsabinaketol** (WALLACH), 1907, A., i, 1060.
- 5-Ethylsalicylaldehyde** and its semicarbazone (AUWERS), 1906, A., i, 963.
- Ethylsilicon trichloride**, preparation of (KIPPING), 1907, T., 214.
- α -Ethylsorbic acid** (*octinoic acid*) and its salts (JAWORSKY), 1903, A., i, 729.
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- Ethylstibine iodide** (AUGER and BILLY), 1904, A., i, 984.
- α -Ethylstyryl propyl ketone** (AUWERS), 1912, A., ii, 1014.
- Ethylsuberane** (*ethylcycloheptane*) (MARKOWNIKOFF and JACOB), 1903, A., i, 239.
- α -Ethylsuccinic acid** (*butanedicarboxylic acid*) β -amino- and its silver salt (LUTZ), 1903, A., i, 148.
 β -hydroxy-, and its amide and silver salt (LUTZ), 1903, A., i, 147.
- Ethyl-succinimide and -succinamic acid, β -bromo-** (BARTHOLDY), 1907, A., i, 1044.
- β -Ethylsulphone- β -phenylpropionic acid** (POSNER and BAUMGARTH), 1908, A., i, 21.
- Ethylsulphonyl-*p*-phenetide, dibromo-** (AUTENRIETH and KOBURGER), 1904, A., i, 35.
- Ethylsulphuric acid**, alkali and alkaline-earth salts, interaction of, with alkali and alkaline-earth nitrites (RAY and NROGI), 1906, T., 1900; P., 259.
- Ethyltanacetone** and its semicarbazone (HALLER), 1905, A., i, 602.
- α -Ethyltetrahydroberberine** and its hydrochloride (FREUND and MAYER), 1907, A., i, 633.
methiodide (FREUND), 1912, A., i, 488.
- N*-Ethyltetrahydropapaverine** and its pierate (PYMAN), 1909, T., 1744.
- 1-Ethyl- Δ^3 -tetrahydropyridine, 3-cyano-**, and its additive salts (WOHL and LOSANITSCH), 1908, A., i, 50.
- 3-Ethyltetrahydropyridine** and its additive salts and isomeride (KOENIGS, BERNHART, and IBELE), 1907, A., i, 791.
- 1-Ethyl- Δ^3 -tetrahydropyridine-3-aldehyde** and its nitrophenylhydrazone and their salts and oxime and its acetate (WOHL, HERTZBERG, and LOSANITSCH), 1906, A., i, 106; (WOHL and LOSANITSCH), 1906, A., i, 107.
- 1-Ethyl- Δ^3 -tetrahydropyridine-3-carboxylic acid**, additive salts of (WOHL and LOSANITSCH), 1908, A., i, 50.
- 1-Ethyltetrahydroquinoline pierate** (v. BRAUN), 1909, A., i, 604.
- 2-Ethyltetrahydroisoquinolone, 6:7-dihydroxy-** (PYMAN), 1910, T., 274.
- 1-Ethyltetrazole** and its platinichloride (OLIVERI-MANDALÀ and ALAGNA), 1911, A., i, 243.
- 1-Ethyltetrazole-5-carboxylic acid** and its salts and derivatives (OLIVERI-MANDALÀ and PASSALACQUA), 1912, A., i, 145.
- Ethyltheobromine, β -hydroxy-** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), 1908, A., i, 475.
- Ethyltheophylline** and its additive salts (SCHMIDT and SCHWABE), 1906, A., i, 449.
and its additive salts and bromo- (SCHWABE), 1908, A., i, 45.
- 4-Ethyl-1:4-thiazan** and its salts (CLARKE), 1912, T., 1587; P., 218.
- 5-Ethylthiobarbituric acid** (EINHORN), 1908, A., i, 315.
- β -Ethyl- ψ -thiocarbamide**, pierate and picrolonate of (WHEELER and JAMIESON), 1908, A., i, 253.
- β -Ethyl- ψ -thiocarbamidoacrylic acid, α -cyano-, ethyl ester** (JOHNSON), 1910, A., i, 69.
- $\beta\psi$ -Ethylthiocarbamido- α -ethylacrylic acid** (JOHNSON and MENGE), 1906, A., i, 986.
- Ethylthiocarbamyglycollic acid** and its salts (HOLMBERG), 1912, A., i, 131.
- Ethylthiocarbonatoacetanilide** (HOLMBERG and PSILANDERHIELM), 1910, A., i, 834.
- Ethyltrithiocarbonatoacetanilide** (HOLMBERG and PSILANDERHIELM), 1910, A., i, 834.
- Ethylthiocodide** (PSCHORR and VOGT-HERR), 1906, A., i, 878.
- α -, γ -, and δ -Ethylthiocodide**, and their derivatives (PSCHORR and ROLLETT), 1910, A., i, 420.
- β -Ethylthiocodide** hydrochloride (PSCHORR and KRECH), 1910, A., i, 422.

Ethylthioglycollphenylhydrazide (FRIEDRICH and FÖRSTER), 1910, A., i, 192.
 Ethylthiolacetic acid (*ethylthioglycollic acid*) (RAMBERG), 1907, A., i, 586.
 platinum salt (RAMBERG), 1906, A., i, 791.
 phototransformation of (RAMBERG), 1910, A., i, 218.
 5-Ethylthiolacridol and its salts (EDINGER and RITSEMA), 1903, A., i, 719.
 1-Ethylthiolanthraquinone, and 1- β -bromo-, 1- $\alpha\beta$ -dibromo-, 1- β -hydroxy- (GATTERMANN), 1912, A., i, 999.
 2-Ethylthiolanthraquinone, 2- β -bromo-, 2- $\alpha\beta$ -dibromo-, and 2- β -hydroxy-, and their derivatives (GATTERMANN), 1912, A., i, 1004.
 4-Ethylthiolanthraquinone, 1-amino-, and its acetyl and benzoyl derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 751.
 1-Ethylthiolanthraquinone-5-sulphonic acid, sodium salt (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 751.
 1-Ethylthiolanthraquinone-6-sulphonic acid, potassium salt (GATTERMANN), 1912, A., i, 1002.
p-Ethylthiolbenzaldehyde and its derivatives (GATTERMANN), 1912, A., i, 985.
o-Ethylthiolbenzoic acid and its ethyl ester, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1908, A., i, 797; 1909, A., i, 231.
 4-Ethylthiolbenzoic acid, 2-amino- (LESER), 1911, A., i, 456.
 Ethylthiolbenzylacetylacetone (RUHEMANN), 1905, T., 20.
 2-Ethylthiol-1-benzylidihydro-6-pyrimidone and its 5-methyl derivative (JOHNSON and DERBY), 1908, A., i, 1018.
 2-Ethylthiol-3-benzylidihydro-6-pyrimidone and its 5-bromo- and 5-methyl derivatives (JOHNSON and DERBY), 1908, A., i, 1018.
 2-Ethylthiol-4-benzylidene-1:5-dihydro-5-glyoxalone (JOHNSON and NICOLET), 1912, A., i, 808.
 2-Ethylthiol-4-benzylidene-1-ethyl-1:5-dihydro-5-glyoxalone (JOHNSON and NICOLET), 1912, A., i, 808.
 2-Ethylthiol-4-benzylidene-1-methyl-1:5-dihydro-5-glyoxalone (JOHNSON and NICOLET), 1912, A., i, 808.
 2-Ethylthiol-5-benzyl-4-methyldihydro-6-pyrimidone (WHEELER and McFARLAND), 1909, A., i, 678.
 Ethylthiolcarbamic acid, metallic salts and derivatives of (ANSCHÜTZ), 1908, A., i, 326.

8- ψ -Ethylthiolcarbamidoacrylic acid, α -benzoylamino-, sodium salt (JOHNSON), 1905, A., i, 836.
 2-Ethylthioldihydropyrimidine, 6-thio- (WHEELER and LIDDLE), 1909, A., i, 61.
 2-Ethylthioldihydro-4-pyrimidone, 6-amino- (JOHNSON and JOHNS), 1905, A., i, 837.
 2-Ethylthioldihydro-6-pyrimidone and its 4:5-dimethyl derivatives, preparation of (WHEELER and MERRIAM), 1903, A., i, 525.
 2-Ethylthioldihydro-6-pyrimidone, 5-amino-, and the action of phosphoryl chloride on (JOHNSON), 1905, A., i, 835.
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 5-bromo- and 5-methyl derivatives (WHEELER and JOHNSON), 1904, A., i, 625.
 5-cyano- (JOHNSON), 1910, A., i, 69.
 5-iodo- (JOHNSON and JOHNS), 1906, A., i, 455.
 2-Ethylthioldihydro-6-pyrimidone-3-acetic acid and its ethyl ester (WHEELER and LIDDLE), 1908, A., i, 693.
 2-Ethylthioldihydro-6-pyrimidone-4-acetic acid and its ethyl ester (WHEELER and LIDDLE), 1908, A., i, 693.
 2-Ethylthioldihydro-6-pyrimidone-5-acetic acid and its ethyl ester and potassium salt (JOHNSON and SPEH), 1907, A., i, 1033.
 2-Ethylthioldihydro-6-pyrimidone-5-carboxylic acid, and its ethyl ester (WHEELER, JOHNSON, and JOHNS), 1907, A., i, 559.
 2-Ethylthiol-1:5- and -3:5-dimethyldihydro-6-pyrimidones (JOHNSON and CLAPP), 1908, A., i, 835.
 Ethylthioldiphenylthiodiazoline, bromo- and iodo-derivatives (BUSCH and SPITTA), 1903, A., i, 533.
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 5-Ethylthiol-1:3-diphenyltriazole (WHEELER and STATIROPOULOS), 1905, A., i, 722.
 2-Ethylthiol-4-ethyldihydro-6-pyrimidone and 5-bromo- (WHEELER, BRISTOL, and JOHNSON), 1905, A., i, 483.
 2-Ethylthiol-5-ethyldihydro-6-pyrimidone (JOHNSON and MENGE), 1906, A., i, 986.

- 2-Ethylthiol-5-ethylpyrimidine, 6-amino- and 6-chloro- (JOHNSON and MENGE), 1906, A., i, 986.
- 3-Ethylthiol-5-keto-1-phenyl-4:5-dihydrotriazole (ACREE), 1903, A., i, 867.
- 6-Ethylthiol-3-methylacetophenone (AUWERS and ARNDT), 1909, A., i, 669.
- 2-Ethylthiol-1-methyldihydro-6-pyrimidone (JOHNSON and HEYL), 1907, A., i, 728.
- 2-Ethylthiol-5-methyldihydro-6-pyrimidone (WHEELER and JOHNSON), 1904, A., i, 624.
- 2-Ethylthiol-4-methyldihydro-6-pyrimidone-5-acetic acid and its ethyl ester and potassium salt (JOHNSON and HEYL), 1908, A., i, 59.
- 2-Ethylthiol-5-methyldihydro-6-pyrimidone-4-carboxylic acid and its ethyl ester (JOHNSON and MACKENZIE), 1909, A., i, 840.
- 2-Ethylthiol-4-methylpyrimidine, 6-amino- and 6-chloro- (JOHNS), 1908, A., i, 917.
- 2-Ethylthiol-5-methylpyrimidine, 6-amino- and 6-chloro- (WHEELER and JOHNSON), 1904, A., i, 624.
- 6-thio- (WHEELER, McFARLAND, and STOREY), 1910, A., i, 139.
- and 6-thiocyano- (JOHNSON, STOREY, and McCOLLUM), 1908, A., i, 837.
- 2-Ethylthiol-4-methylpyrimidine-5-acetic acid, 6-amino-, and 6-chloro-, and its amide (JOHNSON and HEYL), 1908, A., i, 59.
- 2-Ethylthiol-5-phenoxy-4-phenoxy-methyl-1:6-dihydro-6-pyrimidone (JOHNSON and HILL), 1912, A., i, 912.
- 2-Ethylthiol-1-phenyl-4-anisylidenehydantoin (WHEELER and BRAUTLECHT), 1911, A., i, 501.
- 2-Ethylthiol-1-phenyl-4-benzylhydantoin (JOHNSON and BRAUTLECHT), 1911, A., i, 813.
- 2-Ethylthiol-1-phenyl-4-benzylidenehydantoin (WHEELER and BRAUTLECHT), 1911, A., i, 500.
- 2-Ethylthiol-1-phenyl-4-*p*-nitrobenzylidenehydantoin (JOHNSON and BRAUTLECHT), 1912, A., i, 805.
- 2-Ethylthiol-5:6- μ -phenyloxazoline-pyrimidine (JOHNSON and CLAPP), 1905, A., i, 836.
- 2-Ethylthiol-5-phenyluracil (WHEELER and BRISTOL), 1905, A., i, 485.
- 2-Ethylthiopyrimidine, 6-amine derivatives and their hydrochlorides (JOHNSON, JOHNS, and HEYL), 1906, A., i, 771.
- 2-Ethylthiopyrimidine, 6-amino- and 6-chloro- (WHEELER and JOHNSON), 1903, A., i, 526.
- 5-bromo-, and its derivatives (WHEELER and BRISTOL), 1905, A., i, 485.
- 5-bromo-6-amino-, and 6-chloro-5-bromo- (WHEELER and JOHNSON), 1904, A., i, 625.
- 5-bromo-6-thiocyano- and 6-thiocyano- (JOHNSON, STOREY, and McCOLLUM), 1908, A., i, 837.
- 6-chloro-5-iodo- and 5-iodo-6-amino- (JOHNSON and JOHNS), 1906, A., i, 456.
- 2-Ethylthiopyrimidine-5-acetic acid, 6-amino-, γ -lactam of, and 6-chloro-, ethyl ester (JOHNSON, PECK, and AMBLER), 1911, A., i, 575.
- 6-chloro-, and its amide (JOHNSON and SPEH), 1907, A., i, 1084.
- 2-Ethylthiopyrimidine-5-carboxylamide, 6-amino-, and its dibromide (WHEELER and JOHNS), 1908, A., i, 839.
- 2-Ethylthiopyrimidine-5-carboxylic acid, 6-amino-, and 6-chloro-, and their ethyl esters (WHEELER and JOHNS), 1907, A., i, 1083.
- 6-chloro-, acid chloride, and amide of (WHEELER and JOHNS), 1908, A., i, 839.
- 2-Ethylthiopyrimidine-6-thioncarbamic acid, ethyl ester, and its 5-bromo- and 5-methyl derivatives (WHEELER and BRISTOL), 1905, A., i, 484.
- 2-Ethylthiol-6-thiocarbamidopyrimidine and its derivatives (WHEELER and BRISTOL), 1905, A., i, 484.
- 2-Ethylthiol-6-thiocarbimidopyrimidine, and 5-bromo- (WHEELER and BRISTOL), 1905, A., i, 483.
- Ethylthioltriphenyldihydrotriazole, hydroxy- and iodo- (BUSCH and SPITTA), 1903, A., i, 534.
- α -, β -, γ -, and δ -Ethylthiomethylmorphimethines and their derivatives (PSCHORR and ROLLETT), 1910, A., i, 420.
- β -Ethylthiomorphide and its diacetyl derivative and methiodide of the latter (PSCHORR and HOPPE), 1910, A., i, 423.
- 2-Ethylthiophen, influence of light and heat on the bromination and chlorination of (OPOLSKI), 1905, A., i, 367; 1906, A., i, 33.
- 2-Ethylthio-3-phenyl-4-benzylidenehydantoin (WHEELER and BRAUTLECHT), 1911, A., i, 501.
- Ethylthiopyrine and its additive salts and trioxide (MICHAELIS, MOELLER, and KOBER), 1904, A., i, 781.

- Ethyl- ψ -thiopyrine** and its methiodide and sulphone (MICHAELIS, BESSON, MOELLER, and KOBER), 1904, A., i, 783.
- Ethyl-3-thiopyrine** and - ψ -3-thiopyrine (MICHAELIS and DREWS), 1907, A., i, 158.
- Ethylthiovinyltetrahydromorphenol** methyl ether (PSCHORR and ROLLETT), 1910, A., i, 420.
- Ethyl tiglyl ketone** and its *p*-nitrophenylhydrazone and semicarbazone (BLAISE and HERMAN), 1908, A., i, 596.
- Ethyltoluene.** See Methyleneblbenzene.
- Ethyl-*o*-toluidine**, hydroxy- (BADISCHE ANILIN- & SODA-FABRIK), 1906, A., i, 736.
- Ethyl-*p*-toluidine**, bromo-derivatives, and their perbromides (FRIES), 1906, A., i, 647.
- 4-Ethyltriacetoneamine**, and its salts (CLARKE and FRANCIS), 1912, A., i, 722.
- 1-Ethyltriazole** and its -5-carboxylic acid (WOLFF and KRÜCHE), 1912, A., i, 1030.
- 1-Ethyl-1:2:4-triazole** and its additive salts (PELLIZZARI and SOLDI), 1905, A., i, 673.
- 1-Ethyltriazole-4:5-dicarboxylic acid** (WOLFF and KRÜCHE), 1912, A., i, 1030.
- Ethyltriazomalonic acid** and its ethyl ester and amide (FORSTER and MÜLLER), 1910, T., 133; P., 4.
- α -Ethyltricarballic acid** and its triamide (PINNER), 1905, A., i, 464.
- 1-Ethyl-2:3:4-trihydrocinnoline** (TICHWINSKY), 1905, A., i, 92, 93.
- 5-Ethyltrimethylenecarbamide** and its picrate (TAFEL and THOMPSON), 1908, A., i, 58.
- Ethyltriphenylacetic acid** (BISTRZYCKI and MAURON), 1907, A., i, 1045.
- Ethyltripropylammonium iodide**, action of chlorine on (WERNER), 1906, T., 1637; P., 258.
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- Ethyltripropylarsonium iodide** (DEHN and WILLIAMS), 1908, A., i, 721.
- α -Ethylumbelliferone** (FICHTER and GOLDHABER), 1904, A., i, 648.
- Ethyl undecyl ketone** and its oxime and semicarbazone (BLAISE and GUÉRIN), 1904, A., i, 143.
- 1-Ethyluracil** (2:6-diketo-1-ethyltetrahydropyrimidine) (JOHNSON and HEYL), 1907, A., i, 728.
- 1-Ethyluracil**, 5-amino-, and 5-nitro- (BÜCKENDORFF), 1912, A., i, 54.
- 4-Ethyluracil** and 5-bromo- (WHEELER, BRISTOL, and JOHNSON), 1905, A., i, 483.
- 5-Ethyluracil** (2:6-diketo-5-ethyltetrahydropyrimidine) (JOHNSON and MENGE), 1906, A., i, 986.
- 1-Ethyluracil-4-carboxylic acid**, 5-nitro- (BÜCKENDORFF), 1912, A., i, 54.
- 5-Ethyluramil** (FISCHER and DILTHEY), 1905, A., i, 37.
- 7-Ethyluramil** (PILOTY and FINCKH), 1904, A., i, 823; (MÖHLAU and LITTEr), 1906, A., i, 611.
- Ethylurethane**, difluoro- (SWARTS), 1904, A., i, 853.
- hydroxy-, methyl ether. See Carboethoxy- α -methyl- β -ethylhydroxylamine.
- Ethyluric acid glycol** (BILTZ and KREBS), 1910, A., i, 526.
- α -Ethylvaleramide**, α -bromo- (KALLE & Co.), 1905, A., i, 639.
- α -cyano-** (CONRAD and ZART), 1905, A., i, 754.
- α -Ethylvaleric acid** and its esters, amide, and chloride (RASETTI), 1905, A., i, 562.
- α -cyano-**, ethyl ester (CONRAD), 1905, A., i, 752.
- β -Ethylvaleric acid**, menthyl ester of (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 707.
- and α -bromo-, ethyl ester (FICHTER, KIEFER, and BERNOULLI), 1910, A., i, 89.
- α -Ethylisovaleric acid**, β -hydroxy-, and its ethyl ester (BLAISE and MAIRE), 1909, A., i, 85.
- β -Ethylvaleryl chloride**, amide, and carbamide (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 707.
- Ethylisovalerylacetic acid**, ethyl ester (LOCQUIN), 1904, A., i, 552.
- Ethyl vinyl ketone** (BLAISE and MAIRE), 1906, A., i, 142.
- reactions of, and its diethylacetal (MAIRE), 1908, A., i, 247.
- Ethylxanthophanic acid**, *p*-bromophenylhydrazone of (LIEBERMANN and LINDENBAUM), 1908, A., i, 549.
- N*-Ethyl-*m*-5-xylydine**, 2:4:6-trinitro-, and its nitroamine (BLANKSMA), 1903, A., i, 164.
- Ethyl-*p*-xylydine** (HINSBERG and KESSLER), 1905, A., i, 339.
- 2-*N*-Ethyl-*p*-xylydine**, 3:5-dinitro-, and its nitroamine (BLANKSMA), 1905, A., i, 426.
- Ethylzohimboic acid** (SPIEGEL), 1905, A., i, 817.

- Etna**, fumaroles of (LACROIX), 1908, A., ii, 765.
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- Eugenol** and its methyl ether from the oil of *Cinnamomum pedatinervium* of Fiji (GOULDING), 1903, T., 1097; P., 201.
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- Eugenol**, 5-amino-, and its salts and acetyl derivatives (ONDO and PUXEDDU), 1905, A., i, 432.
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- iso***Eugenol**, synthesis of (BÉHAL and TIFFENEAU), 1908, A., i, 260.
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- iso***Eugenol**, nitro-, and its bromo- and acetyl derivatives (PUXEDDU and COMELLA), 1906, A., i, 950.
- o-iso***Eugenol** and bromo-, dibromide (PAULY, v. BUTTLAR, and LOCKEMANN), 1911, A., i, 785.
- Eugenol-** and *isoeugenol*-acetamides, preparation of *N*-substituted aminomethyl derivatives of (EINHORN), 1909, A., i, 508.
- Eugenolacetopiperidylmethylamide** and its hydrochloride (EINHORN), 1909, A., i, 508.
- Eugenyl alcohol** (MANASSE), 1903, A., i, 28.
- Eugenyl** *o*- and *m*-aminobenzoates and their acetyl derivatives and *o*- and *m*-nitrobenzoates (RIEDEL), 1908, A., i, 338.
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- iso***Eugenyl** camphor- β -sulphonate, and hydrogen camphorate, and rotatory powers of (HILDITCH), 1909, T., 338.

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- ψ -**Euphorbic acid**, α - and β - ψ -**Euphorbonic acids**, ψ -*Euphorboresen*, and ψ -*Euphorbone* (TSCHIRCH and LEUCHTENBERGER), 1908, A., i, 196.
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- Formiminoethyl ether** and its double salts, preparation of (HILL and BLACK), 1904, A., i, 296.
- Formiminomethyl ether methyl hydrogen sulphate** (MATSUI), 1910, A., i, 696.
- Formin**, dinitro- (VENDER), 1909, A., i, 692.
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- Formoguanamine** and its dibenzoyl derivative (HUMNICKI), 1907, A., i, 656.
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- Formomethylanilide**, 2:4:5-trichloro-6-nitro- (BADISCHE ANILIN- & SODA-FABRIK), 1907, A., i, 444.
- Formo- α - and - β -naphthalide**, compounds of trinitrobenzene and (SUDBOROUGH and BEARD), 1910, T., 790.
- Formo-*p*-toluidide**, *N*-bromo- and -chloro- (SLOSSON), 1903, A., i, 476.
- Formoxime**, chloro-, methyl ether of (BIDDLE), 1905, A., i, 180.
- Formoximeazocarbonamide** and its metallic salts (WIELAND and HESS), 1909, A., i, 884.
- Formoximehydrazocarbonamide** (WIELAND and HESS), 1909, A., i, 884.
- Formoxyisobutyric acid** and its derivatives (BLAISE), 1912, A., i, 410.
- α -Formoxypropionic acid** and its derivatives (BLAISE), 1912, A., i, 410.
- Formulæ**, deduction of several common, from a general equation of state (VAN ITTERSON), 1906, A., ii, 11.
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- Formylacetic acid**, ethyl ester, and its reactions, and oxime (MICHAEL), 1905, A., i, 563.
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- Formylacetic acid**, α -chloro-, ethyl ester and its salts and derivatives (WISLIGENUS), 1911, A., i, 108.
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- 6- and 7-Formylanilino-1-naphthol-3-sulphonic acids** and sodium salt of the former (FARBENFABRIKEN VORM. F. BAYER & Co.), 1912, A., i, 552.
- Formyl-*p*-anisidine** (FRÖHLICH and WEDEKIND), 1907, A., i, 410.
- 5-Formylazo-*o*-cresol** (BORSCHKE and OCKINGA), 1905, A., i, 719.
- 2- and 4-Formylazo- α -naphthol** (BORSCHKE and OCKINGA), 1905, A., i, 719.
- p*-Formylazophenol** (BORSCHKE and OCKINGA), 1905, A., i, 719.
- Formylbenz-*p*-nitroanilide** (MUMM and HESSE), 1910, A., i, 311.
- α -Formyl- β -*p*-bromophenylhydrazine**, β -nitroso- (GIOVETTI), 1909, A., i, 738.
- Formylisobutacetaldol**, preparation of an unsaturated aldehyde from, and condensation of, with formaldehyde (BUSCH and GOLDENTHAL), 1907, A., i, 184.
- Formylisobutaldol** and its oxime, reduction of (BÖHM), 1907, A., i, 15.
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- Formylbutyric acid**, ethyl ester, sodium derivative (JOHNSON and MENGE), 1906, A., i, 986.
- Formylisobutyric acid**, ethyl ester, and its semicarbazone (BLAISE and MARCILLY), 1904, A., i, 286.
- Formylcamphor** and its derivatives (WEIMANN), 1907, A., i, 328.
- Formylcamphor**, α -bromo- and α -iodo- (BRÜHL and RÜDIGER), 1904, A., i, 601.
- Formylcarbamic acid**, ethyl ester (RUHEMANN and PRIESTLEY), 1909, T., 454; P., 62.
- Formylcodeine** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 765.
- Formyldeoxybenzoin**, desmotropism and derivatives of, and bromo- (WISLIGENUS and RUTHING), 1911, A., i, 303.
- Formyldimethyloctanedionol** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 102.
- 9-Formylfluorene**. See Fluorene-9-aldehyde.
- Formylglutaconic acid** (*hydroxymethyl-eneglutaric acid*) ethyl ester, action of phenylhydrazine on (WISLIGENUS and BREIT), 1907, A., i, 967.
- and bromo-, ethyl esters, and their isomerides and derivatives (WISLIGENUS and V. WRANGELL), 1911, A., i, 521.
- Formylglycine** (FISCHER and WARBURG), 1906, A., i, 72.
- Formylglycollic acid**, ethyl ester (JOHNSON and MCCOLLUM), 1906, A., i, 769.
- Formylglycyl chloride** (MAX), 1909, A., i, 926.
- Formylglyoxylic acid**, ethyl ester, phenylhydrazones of (MICHAEL), 1905, A., i, 564.
- Formylguanidine**, and its bromo derivative (TRAUBE), 1911, A., i, 115.
- Formylhippuric acid**, ethyl ester (ERLENMEYER and STOOP), 1905, A., i, 120.
- Formyl-*l*-histidine** (FISCHER and CONE), 1908, A., i, 1005.
- Formylhomopiperonylamine** (DECKER), 1911, A., i, 906.
- Formyl-leucines**, preparation of (FISCHER), 1906, A., i, 811.
- and -leucyl chloride (FISCHER and WARBURG), 1906, A., i, 72.
- Formylmenthone**, α -bromo- (BRÜHL and RÜDIGER), 1904, A., i, 602.
- d*-Formylmenthylamine** (KONDAKOFF), 1905, A., i, 798.
- Formyl-3-methoxy-4:5-methylenedioxyphenylethylamine** (DECKER), 1912, A., i, 581.
- 2-Formyl-methyl- and -ethyl-aminobenzoic acids** (ULLMANN and UZBACHIAN), 1903, A., i, 626.
- 4-Formylmethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1912, A., i, 516.
- Formylmethylononetin** (V. HEMMELMAYR), 1903, A., i, 508.
- Formylmorphine**, and its salts (FARBENFABRIKEN VORM. F. BAYER & Co.), 1910, A., i, 765.
- Formyloxaluric acid** and its potassium salt (OFFE), 1907, A., i, 646.
- Formylphenoxyacetic acid**, ethyl ester, phenylhydrazone of (JOHNSON and HEYLL), 1907, A., i, 729.
- Formylphenylacetic acid**, ethyl ester (WISLIGENUS), 1912, A., i, 623.

- Formylphenylacetic acid**, ethyl ester, constitution of (MICHAEL), 1906, A., i, 179.
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- Formylphenylalanines** (FISCHER and SCHOELLER), 1907, A., i, 1037.
- Formylphenylglycine** and *p*-amino- and *p*-nitro- (BADISCHE ANILIN- & SOEAFABRIK), 1904, A., i, 1019.
- Formylphthalide** and its bromo-derivative (GABRIEL), 1907, A., i, 215.
- N-Formylpropionamide** (EINHORN), 1908, A., i, 609.
- α -Formylpropionic acid**, ethyl ester, and its reactions, and oxime (MICHAEL), 1905, A., i, 563.
- β -Formylpyrotartaric acid**, ethyl ester (FICHTER and RUDIN), 1904, A., i, 472.
- Formylsuccinic acid**, ethyl ester (JOHNSON and SPEH), 1907, A., i, 1083.
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- α -Formyl- β -*p*-tolylhydrazine**, and β -nitroso- (GIOVETTI), 1909, A., i, 738.
- 1-Formyl-2:3:5-trimethylpyrrole** and its phenylhydrazine (KNORR and HESS), 1912, A., i, 900.
- Formyl-L-tyrosine** (FISCHER), 1907, A., i, 902.
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- Frankincense**, oil of (HAENSEL), 1908, A., i, 665.
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- Freezing of hydrogels** (FISCHER and BOBERTAG), 1909, A., ii, 545.
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Aesculin.

Agrostemmic acid.

Alliin.

Aloe-emodin.

Aloin.

Amygdalin.

isoAmygdalin.

Androsin.

Anhydrogitaligenin.

Anhydrogitalin.

Anthraglucoside.

Antiarin.

Aphrodaescin

Apigenin.

Aralin.

Arbutin.

Artemisin.

Aucubin.

Bakankosin.

ψ -Baptigenin.

Glucosides. See also:—

ψ -Baptisin.

Bixin.

Calmatambin.

Caper-rutin.

Cerebrone.

Chitin.

Chrysophanic acid.

Clavicepsin.

Colocynthin.

Condurangin.

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Convallarin.

Convolvulin.

Convolvulinic acid.

Cornin.

Corynocarpin.

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Emodin.

Emphloin.

Ericolin.

Erytaurin.

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Fraxin.

Géin.

Gentiamarin.

Gentiin.

Gentiopiecin.

Gitalin.

Gitin.

Glaucogallin.

β -Glycolglucoside.

Glycyrrhizic acid.

Gossypitrin.

Gratioligenin.

Grateolin.

Gynocardin.

Gypsophila-saponin.

Helicin.

Incanatrin.

Indican.

Jalapin.

Jasminflorin.

Jesterin.

Kaempferitrin.

Karakin.

Kawarin.

Linamarin.

α - and β -Linarins.

Linin.

l-Mandelonitrile.

Mandelonitrile glucosides.

Glucosides. See also :—

Meliatin.
Methylarbutin.
Methylglucosides.
Methyl-lactoside.
Morindin.
Mowrin.
Natalæ-emodin.
Oleo-europein.
Ononin.
 α - and β -Pectolinarins.
Peltigerin.
Periplocin.
Phallin.
Phaseolunatin.
Phloridzin.
Pimpinellin.
Populin.
Primeverin.
Primulaverin.
Prulaurasin.
Prunitrin.
Quercetin.
Quercimeritrin.
Quercitrin.
isoQuercitrin.
Quillagic acid.
Rhamnocathartin.
Rhamnosides.
Rhamnoxanthin.
Rhaponticin.
Rheoanthraglucoside.
Rheosmin.
Rheotannoglucoside.
Rhnananthin.
Robinin.
Rutin.
Sakuranin.
Salicin.
Sambunigrin.
Sapogenin.
Saponins.
Sapotoxin.
Scammonin.
Seroitrin.
Solamin.
Sophorin.
Strophanthin.
Syringin.
Taxicatin.
Tetarin.
Trifolin.
isoTrifolin.
Trimethyl- α -methylglucoside.
Turpethins.
Turpethin.
Tutin.
Verbenalin.
Vicianin.
Vincetoxin.
Vitexin.

β - α -Glucosidoglycollic acid and its salts and derivatives (FISCHER and HELFERICH), 1911, A., i, 802.
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- Glutaconic acid** and its ethyl ester, action of diazobenzene on (HENRICH and THOMAS), 1908, A., i, 114.
- ethyl ester, preparation of (BLAISE), 1904, A., i, 10.
- methylation and condensation of (BLAISE), 1903, A., i, 400, 548.
- action of diazo-compounds on (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 900.
- synthesis of benzene derivatives from (v. PECHMANN, BAUER, and OBERMILLER), 1904, A., i, 592.
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- copper salt of (MORGENSTERN and ZERNER), 1910, A., i, 656.
- Glutaconic acid**, α -cyano-, ethyl ester, and its ethyl, sodium, and amide derivatives (GUTHZEIT and EYSEN), 1909, A., i, 674.
- Glutaconic acids**, chemistry of the (THOLE and THORPE), 1911, T., 2187, 2208; P., 122, 252; (BLAND and THORPE), 1912, T., 856, 871, 1557, 1739; P., 49, 56, 70, 217, 218; (THORPE), 1912, P., 51.
- Glutaconic acid group**, stereochemistry of (FEIST), 1910, A., i, 7.
- Glutaconimide**, derivatives, invertive power of (TORRESE), 1906, A., i, 531.
- Glutacononic acid**, ethyl ester, mesityl-, α -phenetyl-, phenyl-, p -nitrophenyl-, and *as-m*-xylyl-hydrazones (HENRICH, REICHENBURG, NACHTIGALL, THOMAS, and BAUM), 1910, A., i, 901, 902.
- Glutaconylglutaconic acid**, esters (BLAISE), 1903, A., i, 400.
- Glutamic acid** in various keratins (ABDERHALDEN and FUCHS), 1908, A., i, 1029.
- from various proteins (OSBORNE and GILBERT), 1906, A., i, 324.
- preparation of, from the waste liquors from molasses (ANDRLÍK), 1908, A., i, 797.
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- Glutamic acid**, putrefaction of (BORCHARDT), 1909, A., i, 210.
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- preparation of salts of (ABDERHALDEN and KAUTZSCH), 1910, A., i, 230.
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- separation and estimation of aspartic acid and (OSBORNE and LIDDLE), 1910, A., ii, 1007.
- Glutamic acid**, β -imino- α -cyano-, ethyl ester (BARON, REMFRY, and THORPE), 1904, T., 1744; P., 243.
- d*-**Glutamic acid**, inversion of (FISCHER and MORESCHI), 1912, A., i, 836.
- putrefaction researches with (ABDERHALDEN and KAUTZSCH), 1912, A., i, 952.
- d*- and *dl*-**Glutamic acids**, picronolates of (LEVENE and VAN SLYKE), 1912, A., i, 681.
- Glutamine** (SELLIER), 1904, A., i, 372; (SCHULZE), 1907, A., i, 114.
- and its metallic derivatives and compound with tartaric acid (SCHULZE and GODET), 1907, A., i, 903.
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- specific rotation of (SCHULZE), 1906, A., i, 813.
- rotatory power of (SCHULZE and TRIER), 1912, A., i, 170.
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- Glutamin-lysine** picrate (HUGOUNENQ and MOREL), 1909, A., i, 195.
- Glutan** and **Glutin**, thio- (SADIKOFF), 1907, A., i, 740.
- Glutanol**, **Glutanol**, **Glutinic acid**, and **Glutinoic acid** (A. and H. v. EULER), 1908, A., i, 40.
- Glutardialdehyde** and its polymeride and its bisnitrophenylhydrazone (HARRIES and TANK), 1908, A., i, 517.
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- Glutaric acid** (*n*-pyroglutamic acid; *propanedicarboxylic acid*), electro-synthesis of (VANZETTI and COPPA-DORO), 1904, A., i, 141.

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l-Glutaric acid, α -hydroxy-, sodium salt (FISCHER and MORESCHI), 1912, A., i, 837.
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- Glycerol** (*glycerin*; $\alpha\beta\gamma$ -trihydroxypropane), estimation of, in urine (LEO), 1903, A., ii, 160; (TRILLAT), 1903, A., ii, 187; (ZEISEL and FANTO), 1904, A., ii, 95; (GUGLIEMETTI and COPPETTI), 1904, A., ii, 216; (HERRMANN), 1904, A., ii, 595; (LABORDE), 1905, A., ii, 768; (ROCQUES), 1905, A., ii, 769; (BILLON), 1907, A., ii, 135; (SCHINDLER and SVOBODA), 1909, A., ii, 706; (BÉIS), 1910, A., ii, 756; 1912, A., ii, 813; (RINATI), 1911, A., ii, 545; (ROTHENFUSSER), 1912, A., ii, 607.
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- Glycerols**, dissociation of (NEF), 1905, A., i, 3.
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- Glyceroldiglycyl-l-tyrosine** (ABDERHALDEN and BAUMANN), 1911, A., i, 544.
- Glyceroldisulphonic acid**, barium and potassium salts (GRÜN and SCHACHT), 1907, A., i, 463.
- Glyceroldityrosine** and its copper salt (ABDERHALDEN and BAUMANN), 1911, A., i, 544.
- Glycerolsulphonic acid**, barium salt (THIEME), 1912, A., i, 354.
- Glycerolmonotyrosine** (ABDERHALDEN and GUGGENHEIM), 1910, A., i, 226.
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- Glycerophosphatase** in animal organs (GROSSER and HUSLER), 1912, A., ii, 367.
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- d-Glycerophosphoric acid** (MAYER), 1906, A., i, 919.
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- Glycyl-*d*-alanylglycyl-*l*-tyrosine** (FISCHER), 1908, A., i, 325.
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- Glycyl-*l*-cystine** (FISCHER and GERN-GROSS), 1909, A., i, 367.
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- Glycyl-l-leucyl-d-alanine** and its copper derivative (ABDERHALDEN and FODOR), 1912, A., i, 951.
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- Glycyl-dl-serine**, and its anhydride (FISCHER and ROESNER), 1910, A., i, 657.
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- β -Glyoxaline(4 or 5)-acrylic acid** and its salts (BARGER and EWINS), 1911, T., 2339; P., 305.
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- Glyoxaline-1-diazobenzenesulphonic acid** (BURIÁN), 1904, A., i, 354.
- 4(or 5)-Glyoxaline-ethyl methyl ketone** and its picate (PYMAN), 1911, T., 2176; P., 275.
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- Glyoximeperoxidedicarboxylic acids** and their salts (JOVITSCHITSCH), 1906, A., i, 732.
- Glyoximeperoxidedicarboxylanilide** (DIMROTH and TAUB), 1907, A., i, 97.
- Glyoximeperoxidedicarboxylic acid, ethyl ester** (WAHL), 1906, A., i, 624.
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- Glyoximeperoxidedihydrotetramethyldimalonylic acid, methyl ester, and its carbazone** (PERKIN), 1903, T., 1230.
- Glyoximeperoxidetetramethyldimalonylic acid, methyl ester, physical properties and reactions of** (PERKIN), 1903, T., 1219.
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- Glyoxylase** (GRANSTRÖM), 1908, A., i, 235.
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- $\Delta^{\beta\epsilon}$ -Heptadi-inene, δ -hydroxy-** (VIGUIER), 1912, A., i, 7.
- $\Delta^{\alpha\zeta}$ -Heptadi-inene- δ -carboxylic acid** (*ψ -m-toluic acid*), formation of, and its ethyl ester and silver salt, and its reactions (PERKIN and SIMONSEN), 1906, P., 134; 1907, T., 840; (GARDNER and PERKIN), 1907, T., 854; P., 116.
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- ethyl ester, density, magnetic rotation, and refractive power of** (PERKIN), 1907, T., 844.
- Heptaldehyde** (*oenanthaldehyde*), action of formaldehyde on (VAN MARLE and TOLLENS), 1903, A., i, 460.
- Heptaldehyde** (*oenanthaldehyde*), compounds of, with aniline sulphite (SPERONI), 1903, A., i, 246.
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- enol- n -Heptaldehyde acetates and semicarbazone** (SEMMLER), 1909, A., i, 364.
- cycloHeptaldehyde** (*suberanealdehyde*) (WALLACH and KÖHLER), 1906, A., i, 818.
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- 3:4:5:6:2':3':4'-Heptamethoxydiphenyl-2:6'-dicarboxylic acid** and its methyl ester (HERZIG, TSCHERNE, and v. BRONNECK), 1908, A., i, 548.
- 3:2':4':5':2'':4'':5''-Heptamethoxytriphenylmethane, 4-hydroxy-** (SZEKI), 1911, A., i, 634.
- Heptamethyldikaempferol** (WALIASCHKO), 1909, A., i, 948.
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- Heptamethyleneimine**, attempts to synthesise (v. BRAUN and MÜLLER), 1907, A., i, 28.
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- Heptanaphthylenes**. See Methylcyclohexenes.
- Heptane, amino-**. See Heptylamine.
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- $\alpha\eta$ -dibromo-** (DIONNEAU), 1907, A., i, 747.
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- $\alpha\eta$ -dichloro-** (v. BRAUN and MÜLLER), 1905, A., i, 635.
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*cyclo*Heptane (*heptamethylene*; *suberane*) and its reduction (WILLSTÄTTER and KAMETAKA), 1908, A., i, 401.

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*spiro*Heptanedicarboxylic acid (FECHT), 1907, A., i, 906.

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*cyclo*Heptanemethylamine and its additive salts, carbamide, and trimethylammonium iodide (WALLACH), 1907, A., i, 617.

*cyclo*Heptanepyrazolinecarboxylic acid, ethyl ester, and its hydrochloride (BUCHNER and SCHEDA), 1904, A., i, 412.

n-Heptanesulphonic acid (BOGERT), 1903, A., i, 404.

Heptanetetracarboxylic acid (ANGELI and MARINO), 1908, A., i, 543.

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*spiro*Heptanetetracarboxylic acid, and its sodium hydrogen salt (ÖSTLING), 1912, T., 476.

Heptanetricarboxylic acid and its isomeride, and their anhydrides (ANGELI and MARINO), 1908, A., i, 544.

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s-Heptane- $\alpha\delta\eta$ -triol series, synthesis in the (HAMONET), 1906, A., i, 58.

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*cyclo*Heptanone (*suberone*), physical constants of, and its semicarbazone and dibenzylidene derivative (WALLACH), 1907, A., i, 603.

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*cyclo*Heptene ozonide (HARRIES and TANK), 1903, A., i, 517.

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$\Delta\beta$ -Hepten- δ -ol and its acetate (REIF), 1906, A., i, 394.

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o-Heptenylanisole (KLAGES), 1904, A., i, 1004.

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- Heptinene.** See Allylisopropenylmethane, $\beta\delta$ -Dimethyl- $\Delta\alpha\gamma$ -penta-diene, and ϵ -Methyl- $\Delta\beta\delta$ -hexadiene.
- Heptinenedicarboxylic acid.** See Di-allylmalonic acid.
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- α -Heptinoic acid** (*butylpropionic acid*) and its esters (MOUREU and DELANGE), 1903, A., i, 313.
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- isoHeptodilactone** (FITTIG and FRIEDMANN), 1904, A., i, 418.
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- α -hydroxy-, ethyl ester, anilide, and toluidide of (BAGARD), 1907, A., i, 385.
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- isoHeptoic acid**, α -nitro-, and α -nitroso-, ethyl esters (SCHMIDT and HAID), 1910, A., i, 813.
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- isoHeptoic anhydride**, amide, and anilide (FOURNIER), 1909, A., i, 759.
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- n-Heptonitrile** (HENRY), 1905, A., i, 561.
- Heptose** in human urine (ROSENBERGER), 1907, A., ii, 41.
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- Heptoylcyclohexene**, and its semicarbazone (DARZENS and ROST), 1910, A., i, 856.
- Heptoylmesitylene** (KLAGES and STAMM), 1904, A., i, 303.
- Heptyl bromide** (MABERY and QUAYLE), 1906, A., i, 395.
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- Heptyl alcohol**, condensation of, with ethyl alcohol, and with propyl alcohol (GUERBET), 1903, A., i, 61.
- Heptyl alcohol**, chloro-. See Diethyl- β -chloroethylcarbinol.
- isoHeptyl alcohol** and its acetate (GRIGNARD), 1903, A., i, 552.
- Heptyl alcohols.** See also $\alpha\alpha$ -Diethylpropyl alcohol, Dimethylbutylcarbinol, $\beta\delta$ -Dimethylpentan- δ -ol, *iso*Hexylcarbinol, Methyl- α -ethylbutyl alcohol, Pentamethylethanol, and Propylisopropylcarbinol.
- cycloHeptylacetic acid** and its amide (WALLACH), 1907, A., i, 617.
- n-Heptylacetylene.** See Noninene.
- α -Heptylacrylic acid** and its ethyl ester and potassium salt (BLAISE and LUTTINGER), 1905, A., i, 628.
- Heptylamine**, η -bromo-, and its salts and benzoyl derivative, and η -chloro-, and its picrate (V. BRAUN and MÜLLER), 1907, A., i, 29.
- η -chloro-, and its benzoyl derivative and additive salts (V. BRAUN and MÜLLER), 1905, A., i, 635.
- o-Heptylanisole** and its sulphonic acid (KLAGES), 1904, A., i, 1005.
- Heptylbenzene**, η -bromo-, η -chloro-, and η -iodo- (V. BRAUN, DEUTSCH, and KRUBER), 1911, A., i, 969.
- Heptyl- and Heptylidene-camphors**, rotatory power of (HALER and MARCH), 1906, A., i, 296.
- Heptyleyanoacetamide** (GUARESCHI), 1903, A., i, 737.
- n-Heptyl-cyanoacetic and -malonic acids** (PICCININI), 1904, A., i, 504.
- Heptylene** and hexene series, researches in the (PRSCHEVALSKY), 1909, A., i, 449.
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- Δ^7 -Heptylene** (ZELINSKY and PRSCHEVALSKY), 1908, A., i, 845.
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- Heptylene oxide.** See $\alpha\delta$ -Dimethylamylene $\alpha\beta$ -oxide.
- Heptylenedicarboxylic acid.** See *iso*-Butylitaconic acid.
- Heptylglyoxalic acid**, ethyl ester, and its semicarbazone (WAHL and DOLL), 1912, A., i, 536.
- β -Heptylhexoamide** (GUERBET), 1912, A., i, 67.
- α -Heptylhydracrylic acid** and its potassium salt, ethyl ester, and phenylurethane (BLAISE and LUTTINGER), 1905, A., i, 506.
- Heptylideneacetone** and its semicarbazide-semicarbazone (RUPE and HINTERLACH), 1908, A., i, 13.
- Heptylidenebisoxalacetic acid**, ethyl ester, and its phenylhydrazone, semicarbazone, and hydrate, and dianhydride (GAULT), 1907, A., i, 181.
- Heptylidene-carbamidoxime** (CONDUCHÉ), 1908, A., i, 155.
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- Heptylmesitylene** and its sulphonic acid (KLAGES and STAMM), 1904, A., i, 483.
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- Heptylthiophan** and its sulphone (MABERY and QUAYLE), 1905, A., i, 395.
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- Herring**, chemical composition of the, during the reproductive period (MILROY), 1908, A., ii, 768.
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- Heterocyclic compounds**, formation of (LE SUEUR), 1909, T., 273; P., 36; (LE SUEUR and HAAS), 1910, T., 173; P., 4.
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- Heteropolyacids** (ROSENHEIM and WEINHEBER), 1911, A., i, 109; (ROSENHEIM and PINSKER), 1911, A., i, 265; (ROSENHEIM and KOHN), 1911, A., ii, 116; (ROSENHEIM), 1911, A., ii, 612.
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- Hexa-acetato(formato)-trichrome base**, salts of (WEINLAND and DINKELACKER), 1909, A., i, 757.
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- Hexa-alkylacetones**, fission of (HALLER and BAUER), 1910, A., i, 300.
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- Hexabenzylethane**, *hexanitro-* and *hexamino-* and its platinichloride (SCHMERDA), 1909, A., i, 564.
- Hexachloro-iridium compounds** (GUTBIER and LINDNER), 1909, A., ii, 1025.
- Hexacontane**, molecular weight of (STRUVE), 1908, A., i, 749.
- Δ^{60} -Hexadecadiene** (REFORMATSKY, GRISCHKWITSCH-TROCHIMOWSKY, and SEMENTSOFF), 1911, A., i, 597.
- Hexadecyl α -naphthylcarbamate** (NEUBERG and KANSKY), 1909, A., i, 690.
- Hexadecyl phenylurethane** (BLOCH), 1904, A., i, 152.
- Hexadecyl alcohol** (*triisoamylcarbinol*) (GRIGNARD), 1903, A., i, 455.
- β -Hexadecyl-*d*-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), 1911, A., i, 802.
- Hexadecylmalonic acid**, methyl ester (MEYER), 1907, A., i, 180.
- Hexadecylphosphoric acid** and its salts (BIEHRINGER), 1906, A., i, 2.
- Hexadecylthiophan** (MABERY and QUAYLE), 1906, A., i, 395.
- Δ^{86} -Hexadiene** and its dihydrobromide and tetrabromide (RIEF), 1908, A., i, 847; (BRÜHL), 1908, A., ii, 1002.
- Δ^{86} -Hexadiene**, *aa\beta\epsilon(\zeta)*-hexaiodo- (LESPICHAU and VAVON), 1909, A., i, 450.
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- cyclo***Hexadiene** (*dihydrobenzene*) derivatives, optical behaviour of (AUWERS), 1908, A., i, 520.
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- $\Delta^{1,4}$ -*cyclo*Hexadiene-1:2-dicarboxylic acid** ($\Delta^{1,4}$ -*dihydroterephthalic acid*), dimethyl ester (RUPE and MÜNTER), 1910, A., i, 398.

- $\Delta^{1:4}$ -*cyclo*Hexadiene-1:4-dicarboxylic acid (PERKIN and TATTERSALL), 1907, T., 494.
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- Hexahydrobenzoylacetetic acid, esters and copper salts (WAHL and MEYER), 1908, A., i, 890.
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methyl and ethyl esters (WAHL and MEYER), 1907, A., i, 765.
- Hexahydrobenzoylacetone, and its copper and sodium derivatives (GODCHOT), 1911, A., i, 134.
- 3-Hexahydrobenzoyl-6-*cyclo*hexyl-2:4-pyrone (WAHL and MEYER), 1908, A., i, 891.
- 1-Hexahydrobenzoyl-2-pentanone and its derivatives (WALLACH and OST), 1911, A., i, 474.
- β -Hexahydrobenzoylphenylhydrazine (RUPE and METZ), 1903, A., i, 536.
- δ -Hexahydrobenzoyl-*n*-valeric acid and its derivatives (WALLACH and OST), 1911, A., i, 473.
- Hexahydrobenzyl chloride and iodide. See Methylcyclohexane, ω -chloro-, and ω -iodo-.
- Hexahydrobenzyl alcohol and its urethane (BOUVEAULT and BLANC), 1904, A., i, 673.
- Hexahydrobenzylamine, preparation of (SABATIER and MAILHE), 1911, A., i, 627.
- Hexahydrobenzylaniline, *o*-hydroxy- (BORSCHÉ and SCHMIDT), 1911, A., i, 59.
- Hexahydrobenzylmalonic acid, and its ethyl ester (ZELINSKY), 1908, A., i, 864.
- Hexahydrobenzyl methyl ketone and its semicarbazone (WALLACH), 1907, A., i, 617; (HELL and SCHAAL), 1909, A., i, 593.
- Hexahydro-benzyl- and -benzylidene-camphors, rotatory powers of (HALLER and MARCH), 1906, A., i, 296.
- Hexahydrocarbazole, derivatives of (BORSCHÉ, WITTE, and BOTHE), 1908, A., i, 365.
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- Hexahydrocarvacrols. See α - and β -Carvacromenthols.
- Hexahydro- β -collidine and its additive salts, oxalate, and hydrogen tartrate, and dibromo-, hydrobromide of (KOENIGS and BERNHART), 1905, A., i, 824.

- Hexahydrocymene.** See 4-Methylisopropylcyclohexane.
- α -Hexahydroflavanthrenhydrate** (SCHOLL and NEOVIUS), 1908, A., i, 740.
- Hexahydroflavanthrens, α - and β -** (SCHOLL and HOLDERMANN), 1908, A., i, 697.
- Hexahydrohippuric acid, and its derivatives** (GODCHOT), 1911, A., i, 369.
- Hexahydrohomoisophthalic acid** (KOMPFA and HIRN), 1904, A., i, 60.
- Hexahydrometanicotine** (MAASS), 1905, A., i, 543.
and its platinichloride (MAASS and HILDEBRANDT), 1906, A., i, 980.
- Hexahydrophenanthrene** (SCHMIDT and MEZGER), 1907, A., i, 1023.
and its picrate and bromo-derivatives (BRETEAU), 1905, A., i, 338.
- Hexahydrophenylglycine.** See cyclo-Hexylglycine.
- Hexahydroisophthalic acid.** See cyclo-Hexane-1:3-dicarboxylic acid.
- Hexahydropropionophenone.** See cyclo-Hexyl ethyl ketone.
- Hexahydropyrene, picrate of** (LANGSTEIN), 1910, A., i, 727.
- Hexahydropyrimidine, cyano-derivatives, preparation of** (MERCK), 1907, A., i, 356.
thio-derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 245.
- Hexahydropyrimidine, 2:4:6-triimino- (triiminobarbituric acid), and its derivatives** (MERCK), 1906, A., i, 537.
4:6-diimino-2-thio-, and its alkyl derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), 1905, A., i, 671.
- Hexahydropyrimidine, 5-oximino-4-imino-, preparation of derivatives of** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 270.
- Hexahydro-6-pyrimidone, 5-oximino-4-imino-2-cyanoimino-** (FARBENFABRIKEN VORM. F. BAYER & Co.), 1909, A., i, 270.
- Hexahydroterephthalic acid.** See cyclo-Hexane-1:4-dicarboxylic acid.
- Hexahydrotetrazine, p -diimino-. See Guanazole, 4-amino-.**
- Hexahydrothiophenol.** See cycloHexyl mercaptan.
- Hexahydrothymol.** See Thymomenthol.
- Hexahydro- o -tolualdehyde and its semicarbazone** (TSCHITSCHIBABIN), 1904, A., i, 421.
- Hexahydro- p -tolualdehyde and its semicarbazone** (WALLACH and EVANS), 1906, A., i, 566; (MARCKWALD and METH), 1906, A., i, 663.
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- Hexahydro- o -, m -, and p -tolualdehydes** (DARZENS and LEFÉBURE), 1906, A., i, 430.
- Hexahydrotoluic acids.** See Methylcyclohexanecarboxylic acids.
- Hexahydro- p -tolylacetic acid and α -bromo-** (PERKIN and POPE), 1906, P., 108.
- Hexahydro- p -tolylcarbinol and its bromide** (PERKIN and POPE), 1906, P., 108.
- Hexahydrotriphenylcarbinol.** See cyclo-Hexyldiphenylcarbinol.
- Hexahydrovaleritrine and its additive salts** (TSCHITSCHIBABIN), 1906, A., i, 451.
- Hexalactatotrichrome base, salts of** (CALCAGNI), 1910, A., i, 811.
- Hexaldehyde and its azine, oxime, semicarbazone, and diethylacetal** (BAGARD), 1907, A., i, 385.
- Hexamethoxy-benzil mono-oximes and -hydrobenzoin and its diacetyl derivative** (HEFFTER and CAPELLMANN), 1905, A., i, 877.
- 2:3:4:3':4':5'-Hexamethoxybenzophenone** (PERKIN, WEIZMANN, and HARDING), 1906, T., 1665.
- 2:4:6:3':4':5'-Hexamethoxybenzophenone and its leuco-compound, synthesis of** (V. KOSTANECKI and TAMBOR), 1907, A., i, 75.
- 2:4:5:2':4':5'-Hexamethoxydibenzylidenebenzidine and its hydrochloride** (FABINYI and SZÉKI), 1906, A., i, 423.
- 2:4:5:2':4':5'-Hexamethoxydiphenyl** (FABINYI and SZÉKI), 1910, A., i, 838.
- Hexamethoxydiphenyls, 2:3:4:2':3':4'- and 3:4:5:3':4':5'-** (GRAEBE and SUTER), 1905, A., i, 703.
- 2:4:5:2':4':5'-Hexamethoxydiphenyl-acetonitrile** (FABINYI and SZÉKI), 1910, A., i, 838.
- 2:3:4:4':5':6'-Hexamethoxydiphenyl-6:2'-dicarboxylic acid and its methyl ester** (HERZIG and POLAR), 1908, A., i, 547.
- Hexamethoxydiphenylmethane, bromine derivative of** (FABINYI and SZÉKI), 1910, A., i, 838.
- Hexamethoxydiphenylphthalide** (PERKIN and WEIZMANN), 1906, T., 1657.

- 2:4:5:2':5'-Hexamethoxy-*β*-phenoxymethyl-*β*-phenylisobutyric acid and its methyl ester and silver salt (ENGELS, PERKIN, and ROBINSON), 1908, T., 1158.
- 2:5:2':5':2':5'-Hexamethoxytriphenylcarbinol (KAUFFMANN and FRITZ), 1909, A., i, 99.
- 2:4:2':4':2':4'-Hexamethoxytriphenylmethane (KAUFFMANN and KIESER), 1912, A., i, 853.
- 2:4:5:2':4':5'-Hexamethoxytriphenylmethane (SZÉKI), 1911, A., i, 634.
- 2':4':5':2':4':5'-Hexamethoxytriphenylmethane, 3- and 4-nitro-, 2- and 4-hydroxy-, and 3:4-dihydroxy- (SZÉKI), 1911, A., i, 634.
- 2:5:2':5':2':5'-Hexamethoxytriphenylmethane (KAUFFMANN and FRITZ), 1909, A., i, 99.
- Hexamethylacridine haloids (SENIER and AUSTIN), 1904, T., 1202; P., 176.
- dimagnesium alkyl iodides (SENIER, AUSTIN, and CLARKE), 1905, T., 1473; P., 228.
- 1:3:4:6:7:9-Hexamethylacridine (SENIER and COMPTON), 1907, T., 1934; P., 248.
- Hexamethyldiaminobenzophenone and its salts (ZOHLEN), 1903, A., i, 118.
- Hexamethyltriaminocycaphenine (SACHS and STEINERT), 1904, A., i, 506.
- 2:13:13'-Hexamethyltriamino-8:9-diphenyldihydroanthracene (GUYOT and PIGNET), 1908, A., i, 570.
- Hexamethyltriaminodiphenylnaphthylcarbinol. See Naphtho-blue.
- 3:4':4'-Hexamethyltriaminodiphenyl-*o*-toluidine (BIELECKI and KOLENIEW), 1908, A., i, 698.
- Hexamethyltriaminodiphenyl-tolylmethanes and -xylylmethanes and their oxidation products (BIELECKI and KOLENIEW), 1908, A., i, 698.
- Hexamethyltriaminohydrobenzamide and its derivatives (SACHS and STEINERT), 1904, A., i, 506.
- p**p'**p''**p'''*-Hexamethyltriamino-*o*'''-mono- and -*o**o'**o''*-dihydroxytriphenylmethanes and their acetyl derivatives (NOELTING and GERLINGER), 1906, A., i, 610.
- 2:8:4'-Hexamethyltriamino-5-phenylacridine (*hexamethylrhoneine*) (GRANDMOUGIN and LANG), 1909, A., i, 974.
- Hexamethyltriaminophenyldi-*o*-tolylcarbinol and its hydrochloride (RAS-SOW and REUTER), 1912, A., i, 587.
- Hexamethyltriaminotriphenylacetic acid, ethyl ester (GUYOT), 1907, A., i, 640, 641.
- Hexamethyltriaminotriphenylbenzylmethane and its hydriodide (FREUND and BECK), 1905, A., i, 159.
- Hexamethyltriaminotriphenylcarbinol, methyl ether (v. BAeyer and VILLIGER), 1904, A., i, 787.
- Hexamethyltriaminotriphenylcarbinols (v. BAeyer), 1907, A., i, 762.
- 3:4':4'-Hexamethyltriaminotriphenylmethane (v. BAeyer), 1907, A., i, 762.
- 4:4':4'-Hexamethyltriaminotriphenylmethane trioxide and its derivatives (BAMBERGER and RUDOLF), 1908, A., i, 1012.
- Hexamethyltri-*p*-aminotriphenylmethanamine (VILLIGER and KOPETSCHNI), 1912, A., i, 1031.
- Hexamethylammonio-cadmium chloride (LANG), 1903, T., 724; P., 125.
- Hexamethylammonio-cadmium iodide (v. BRAUN), 1911, A., i, 612.
- Hexamethylbenzene, *ωω'*-dinitro- (WILLSTÄTTER and KUBLI), 1909, A., i, 899.
- Hexamethylbutylene-*αδ*-diammonium hydroxide and iodide (FARBENFABRIKEN VORM. F. BAYER & Co.), 1911, A., i, 609.
- Hexamethyldecylenediammonium hydroxide and iodide (v. BRAUN), 1912, A., i, 165.
- 2:3:3:5:6:6-Hexamethyl-3:6-dihydropyrazine and its salts (GABRIEL), 1911, A., i, 213.
- Hexamethyldiphenyls, 2:4:5:2':4':5'- and 2:4:6:2':4':6'- (ULLMANN), 1904, A., i, 726.
- 3:5:6:3':5':6'-Hexamethyldiphenylmethane, 2:2'-dihydroxy-. See Di-*o*-*ψ*-cumenolmethane.
- 2:2:4:2':2':4'-Hexamethyldipiperidyl and its additive salts (ISSOGLIO), 1908, A., i, 1009.
- Hexamethylene. See *cyclo*Hexane.
- Hexamethylene glycol. See Hexane-*αζ*-diol.
- Hexamethyleneamine. See Hexamethylenetetramine.
- Hexamethylenediamine, synthesis of, and its additive salts (NEUBERG and NEIMANN), 1905, A., i, 686.
- synthesis of, and its benzoyl and benzenesulphonic derivatives (v. BRAUN and MÜLLER), 1905, A., i, 636.
- Hexamethyleneimine and its methiodide and additive salts (WALLACH), 1903, A., i, 104.
- synthesis of, and its additive salts, derivatives, and polymeride (v. BRAUN and STEINDORFF), 1905, A., i, 826.

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Hexamethylenetetramine (*hexamethylenamine*; *urotropine*) persulphates, metallic (BARBIERI and CALZOLARI), 1911, A., ii, 889.

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Hexamethylenetetraminediguaiacol (HOFFMANN, LA ROCHE & Co.), 1911, A., i, 127.

Hexamethylenetetraminetriguaiacol (HOFFMANN, LA ROCHE & Co.), 1910, A., i, 378.

Hexamethylethane ($\beta\beta\gamma\gamma$ -tetramethylbutane) (HENRY), 1906, A., i, 473. new synthesis of (HENRY and DE WÆL), 1906, A., i, 782.

Hexamethylethylenediammonium iodide and platinichloride (SKRAUP and PHILIPPI), 1911, A., ii, 587.

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Hexamethylphloroglucinol, preparation of (HERZIG and ERTHAL), 1910, A., i, 667.

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Hexamethylpiperazine and its salts and dinitroso- (GABRIEL), 1911, A., i, 213.

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Hexamethylsilicoethane (BYGDÉN), 1912, A., i, 342.

Hexamethyltetramethylenediammonium salts (WILLSTÄTTER and HEUBNER), 1907, A., i, 960.

Hexamethyltrimethylenediammonium periodides (STRÖMHOLM), 1903, A., i, 462.

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*iso***Hexane** (*β*-methylpentane) (CLARKE and SHREVE), 1906, A., i, 473.

*iso***Hexane**, *α*-amino-. See *iso*Hexylamine.

αε-diamino-, and its salts and dibenzoyl derivative (FRANKE and KOHN), 1903, A., i, 153.

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*iso***Hexane**, *βε*-dibromo- (KIJNER and KLAUWIKORDOFF), 1911, A., i, 635.

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*iso***Hexanes** in Roumanian petroleum (PONI and COSTACHESCU), 1905, A., i, 109.

*cyclo***Hexane**, and its chloro-derivatives (SABATIER and MAILHE), 1903, A., i, 686.

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*cyclo*Hexane group, preparation of saturated compounds of the (ZELINSKY and SCHWEDOFF), 1908, A., i, 864.
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*cyclo*Hexanealdehyde and its semicarbazone and polymerides (WALLACH and ISAAC), 1906, A., i, 564.
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*cyclo*Hexanecarboxylic acids, *cis*- and *trans*-, 3-bromo- (PERKIN and TATTERSALL), 1907, T., 488.
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*cyclo*Hexane-1:1-diacetic acid, and its imide, anhydride and other derivatives (THOLE and THORPE), 1911, T., 445.
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*cyclo*Hexane-1:3-dicarboxylic acid, 2- and 4-mono-, and 2:3- and 3:4-dibromo- (PERKIN and PICKLES), 1905, T., 304; P., 76.
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*cyclo*Hexane-1:4-dicarboxylic acid, *trans*-, dimenthyl ester (RUPE and MÜNTER), 1910, A., i, 398.
*cyclo*Hexane-1:4-dicarboxylic acid, 1:4-diamino-, and its sulphate and nitrile and 1:4-dihydroxy-, and its barium salt and nitrile (ZELINSKY and SCHLESINGER), 1907, A., i, 704.
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*cyclo*Hexane-1:3-dicarboxylic acids, *cis*- and *trans*-, preparation and separation of (GOODWIN and PERKIN), 1905, T., 841; P., 187.
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*cyclo*Hexane-1:1-dimalonic acid, imide, di-imino-di-imide, and di-imide of, and their derivatives (THOLE and THORPE), 1911, T., 444, 447.
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Hexane- α -diol, synthesis of ethers of (DIONNEAU), 1910, A., i, 353.

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*iso***Hexane- $\alpha\delta$ -diol** (FRANKE and KOHN), 1907, A., i, 816.

and its chloroacetin and oxide (HENRY), 1907, A., i, 106.

*iso***Hexane- $\beta\gamma$ -diol** (UMNOVA), 1911, A., i, 250.

*iso***Hexane- $\beta\delta$ -diol**, and its derivatives (BOUVEAULT and LOCQUIN), 1911, A., i, 2.

β -cycloHexane-1:2-diol and its ethers, acetate, and benzoate (BRUNEL), 1903, A., i, 338.

*eso*anhydride and its derivatives (BRUNEL), 1903, A., i, 338, 695.

action of ammonia on (BRUNEL), 1903, A., i, 680.

cis-**cycloHexane-1:2-diol** (SABATIER and MAILHE), 1908, A., i, 529.

cycloHexane-1:3-dione and its oxime (KÖTZ and GRETHE), 1910, A., i, 24.

cycloHexane-1:4-dione, condensation of, with aldehydes (STOLLÉ and MÖRING), 1904, A., i, 875.

cycloHexane-1:3-dione-2 propionic acid and its dioxime and compound with semicarbazide (V. PECHMANN and SIDGWICK), 1904, A., i, 972.

Hexane- $\beta\delta$ -dione- $\alpha\alpha$ -tricarboxylic acid, γ -hydroxy-, methyl ester, and its phenylhydrazone (KOMNENOS), 1910, A., i, 542.

Hexane- $\beta\delta$ -dione- $\alpha\gamma$ -tricarboxylic acid, methyl ester, and its phenylhydrazone (KOMNENOS), 1910, A., i, 542.

Hexane- $\alpha\gamma\gamma\delta\delta$ -hexacarboxylic acid (SILBERRAD), 1904, T., 614; P., 61.

cycloHexanemethylamine and its additive salts and carbamide (WALLACH), 1907, A., i, 617.

cycloHexanerosanilines, carbinol salts of (SCHMIDLIN), 1904, A., i, 944.

cycloHexanerosanilines, tetrahydroxy- (SCHMIDLIN), 1904, A., i, 944, 1061.

$\alpha\beta$ -Hexanesuccinimide, **$\alpha\beta$ -diacyano-** (GUARESCHI), 1911, A., i, 793.

cycloHexanesulphonic acid and its salts, ethyl ester, anilide, and chloride (BORSCHÉ and LANGE), 1905, A., i, 765.

Hexane- $\alpha\gamma\delta\zeta$ -tetracarboxylic acid. See **$\alpha\alpha$ -Diglutaric acid**.

cycloHexane-1:1:3:3-tetracarboxylic acid, preparation of (GOODWIN and PERKIN), 1905, T., 846.

Hexane- $\alpha\gamma\delta\zeta$ -tetrone- $\alpha\zeta$ -dicarboxylic acid, ethyl ester (DIELS), 1903, A., i, 400.

*iso***Hexane- $\alpha\alpha\delta$ -tricarboxylic acid**, ethyl ester (BLANC), 1907, A., i, 1058.

Hexanetricarboxylic acids. See also Dimethylbutanetricarboxylic acid and $\alpha\alpha\gamma$ -Trimethyltricarboxylic acid.

Hexane- $\beta\gamma\delta$ -triol and its triacetate (REIF), 1908, A., i, 847.

cycloHexane-1:2:3-triol (SABATIER and MAILHE), 1908, A., i, 529.

α - and β -cycloHexane-1:2:3-triol and their salts (BRUNEL), 1910, A., i, 477.

cycloHexanetrioldione (*diketocyclohexane, trihydroxy-*) (POWER and TUTIN), 1904, T., 628; P., 87.

Hexane- $\beta\gamma\epsilon$ -trione, trioxime of, and its tribenzoyl derivative (ANGELI, ANGELICO, and CALVELLO), 1904, A., i, 188; (ANGELICO and CALVELLO), 1904, A., i, 447.

cycloHexanetrione, transformation of a phloroglucinol derivative into one of (HELLER), 1909, A., i, 656; 1912, A., i, 274.

*iso***Hexan- δ -ol**, α -chloro- (HENRY), 1907, A., i, 106.

cycloHexanol (HOLLEMAN; BOUVEAULT), 1904, A., i, 40; (BRUNEL), 1904, A., i, 158.

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and phenol, mutual solubility of (MASCARELLI and PESTALOZZA), 1908, A., i, 527.

as a solvent (CHAVANNE and VAN ROELEN), 1909, A., i, 21.

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oxidation of (MANNICH and HÂNCU), 1908, A., i, 245.

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action of, with bromine and aluminium bromide (BODROUX and TABOURY), 1911, A., i, 779.

condensation of formaldehyde and (MURAT and CATHALA), 1912, A., i, 847.

ethers and esters of (BRUNEL), 1905, A., i, 274.

cycloHexanol, 2-amino-, and its salts (BRUNEL), 1903, A., i, 680.

2-iodo-, and its methyl and ethyl ethers (BRUNEL), 1903, A., i, 157.

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*cyclo***Hexanols**, preparation of esters of, and organic acids (SENDERENS and ABOULENO), 1912, A., i, 694.

1-cycloHexanol-1-acetic acid and its salts (SAYTZEFF), 1912, A., i, 777.
and its ethyl ester (WALLACH and ISAAC), 1906, A., i, 176, 564.

*cyclo***Hexanol-*n*-butyric acid**, ethyl ester (WALLACH, CHURCHILL, and RENTSCHLER), 1908, A., i, 404.

*cyclo***Hexanolisobutyric acid**, ethyl ester (WALLACH and MALLISON), 1908, A., i, 406.

cyclo-**Hexan-1-ol-1-carboxylic acid**, methyl, ethyl, and isocamyl esters, potassium salt, and amide (TARBOURIECH), 1909, A., i, 796.

*cis-cyclo***Hexanol-3-carboxylic acid**, and its ethyl ester and lactone (PERKIN and TATTERSALL), 1907, T., 486.

*trans-cyclo***Hexanol-3-carboxylic acid** (PERKIN and TATTERSALL), 1907, T., 489.

*trans-cyclo***Hexanol-4-carboxylic acid** (PERKIN), 1904, T., 419; P., 51.

Hexan- β -ol- ϵ -one and its anhydride, benzoic and acetic esters, oxime, semicarbazone, and sodium hydrogen sulphite compound (LIPP and SCHELLER), 1909, A., i, 451.

*cyclo***Hexan-2-ol-one** (KÖTZ and GRETHE), 1910, A., i, 24.

*cyclo***Hexanolpropan- β -ol** (TARBOURIECH), 1909, A., i, 796.
dehydration of (TARBOURIECH), 1910, A., i, 32.

*cyclo***Hexanol-1- α -propionic acid**, ethyl ester (WALLACH and EVANS), 1908, A., i, 403.

β -cycloHexan-1-ol-2-sulphonic acid, sodium salt (BRUNEL), 1903, A., i, 695.

Hexan- β -one, action of organo-magnesium compounds on (BODROUX and TABOURY), 1909, A., i, 546.

*cyclo***Hexanone**, preparation of (SABATIER and SENDERENS), 1904, A., i, 156; (HOLLEMAN, VAN DER LAAN, and SLYPER), 1905, A., i, 443.

tautomerism of (MANNICH), 1906, A., i, 482.

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condensation of (MANNICH), 1907, A., i, 205.

*cyclo***Hexanone**, bromination of (BODROUX and TABOURY), 1912, A., i, 567.

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condensation of, with ethyl α -bromo-*n*-butyrate (WALLACH, CHURCHILL, and RENTSCHLER), 1908, A., i, 404.

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condensation of, with ethyl α -bromopropionate (WALLACH and EVANS), 1908, A., i, 403.

condensation of, with ethyl chloroacetate (DARZENS and LEFÉBURE), 1906, A., i, 430.

action of hydrazine hydrate on (KIJNER and BELOFF), 1911, A., i, 678.

condensation of opianic and phthalaldehydic acids with (MORGENSTERN), 1909, A., i, 803.

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*cyclo***Hexanone**, 2-bromo- (KÖTZ and GÖTZ), 1908, A., i, 174.

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2-chloro-, and 2-hydroxy-, and its semicarbazone (BOUVEAULT and CHEREAU), 1906, A., i, 513.

2:6-dioximino- and the corresponding dibenzoate (BORSCHÉ), 1910, A., i, 178.

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*cyclo***Hexanones**, halogenides of (KÖTZ and STEINHORST), 1911, A., i, 210.

*cyclo***Hexanone-anil-*o*-carboxylic acid** (TIEDTKE), 1909, A., i, 255.

*cyclo***Hexanone-2-carboxylic acid** (GARDNER, PERKIN, and WATSON), 1910, T., 1764; P., 137.

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*cyclo***Hexanone-2-carboxylic acid**, 2-bromo- and 2-chloro-, ethyl esters (KÖTZ and GÖTZ), 1908, A., i, 174; (KÖTZ), 1910, A., i, 259.

*cyclo*Hexanone-3-carboxylic acid and its ethyl esters, silver salt, oxime, and semicarbazone (PERKIN and TATTERSALL), 1906, P., 268; 1907, T., 491.

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*cyclo*Hexanone-4-carboxylic acid and its esters, oxime, phenylhydrazone, and semicarbazone, and its reactions (PERKIN), 1904, T., 416; P., 51.

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*cyclo*Hexanone-2:4-dicarboxylic acid, ethyl ester (KAY and PERKIN), 1906, T., 1647; P., 270.

*cyclo*Hexanone-3:6-dicarboxylic acid, ethyl ester (DOBSON, FERNS, and PERKIN), 1909, T., 2013; P., 263.

*cyclo*Hexanone- α -naphthylhydrazone and -*o*-, -*m*-, and -*p*-nitrophenylhydrazones (BORSCHKE, WITTE, and BOTHE), 1908, A., i, 366.

2-*cyclo*Hexanone-1-oxalic acid and its ethyl ester, synthesis of (KÖTZ and MICHELS), 1907, A., i, 58.

*cyclo*Hexanoneoxime, 3-hydroxyamino- (KÖTZ and GRETHE), 1910, A., i, 24.

*cyclo*Hexanoneisooxime, hydrolysis and reduction of (WALLACH), 1906, A., i, 175.

1:3:3:4:6:6-Hexaphenyl-2:5-diketopiperazine (KLINGER and NICKELL), 1912, A., i, 699.

Hexaphenylethane (GOMBERG), 1903, A., i, 244; (VORLÄNDER), 1904, A., i, 659; (SCHMIDLIN), 1907, A., i, 27; (TSCHITSCHIBABIN), 1907, A., i, 204; (WIELAND), 1911, A., i, 569.

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Hexatolyethane (GOMBERG), 1904, A., i, 489.

n-Hexatriacontane (GASCARD), 1912, A., i, 65.

$\Delta^{9\epsilon}$ -Hexatriene, preparation, reactions, and bromides of (VAN ROMBURGH and VAN DORSEN), 1906, A., i, 130, 722.

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*cyclo*Hexene (*tetrahydrobenzene*), preparation of (HOLLEMAN, VAN DER LAAN, and SLYPER), 1905, A., i, 444. preparation of, from cyclohexanol (BRUNEL), 1905, A., i, 268.

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Δ^1 -*cyclo*Hexene, bromo-, and its dibromide (ZELINSKY and GORSKY), 1911, A., i, 847.

5-bromo-, and dibromide (SOBECKI), 1910, A., i, 367.

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1:2-dibromo- (FAWORSKY and BOSHOWSKY), 1912, A., i, 616.

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1-chloro- (SKITA and RITTER), 1911, A., i, 272.

Δ^1 -*cyclo*Hexeneacetic acid and its oxidation (WALLACH and ISAAO), 1906, A., i, 176.

and its derivatives and isomeride (WALLACH), 1907, A., i, 616.

- Δ^1 -*cyclo*Hexeneacetic acid and its nitrile (HARDING, HAWORTH, and PERKIN), 1908, T., 1959.
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- Δ^1 -*cyclo*Hexeneacetic acid, ethyl ester (AUWERS and ELLINGER), 1912, A., i, 188.
- Δ^1 -*cyclo*Hexeneacetic acid, α -cyano-, and its ethyl ester (HARDING, HAWORTH, and PERKIN), 1908, T., 1956.
- Δ^2 -*cyclo*Hexeneacetic acid (EYKMAN), 1909, A., i, 718.
- cyclo*Hexeneacetyl chloride (DARZENS and ROST), 1911, A., i, 988.
- Δ^2 -Hexenealdehyde and its derivatives (CURTIUS and FRANZEN), 1912, A., ii, 798.
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- Δ^1 -*cyclo*Hexenealdehyde and its oxime and semicarbazone (WALLACH and ISAAC), 1906, A., i, 565.
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- Δ^3 -*cyclo*Hexenealdehyde and its semicarbazone (SOBECKI), 1910, A., i, 367.
- cyclo*Hexene-*n*-butyric acid and its ethyl ester and silver salt (WALLACH, CHURCHILL, and RENTSCHLER), 1908, A., i, 404.
- Δ^1 -*cyclo*Hexene-1- α -isobutyric acid (WALLACH and MALLISON), 1908, A., i, 406.
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- Δ^3 -*cyclo*Hexenecarboxylic acid (PERKIN), 1904, T., 420; P., 51; (PERKIN and TATTERSALL), 1907, T., 490.
- cyclo*Hexenecarboxylic acids, Δ^1 - and Δ^2 -, menthyl esters, and their rotation (RUPE, LOTZ, and SILBERBERG), 1903, A., i, 566.
- Δ^4 -*cyclo*Hexene-1:2-dicarboxylic acid (*tetrahydrophthalic acid*), resolution of (ABATI and DE HORATIIS), 1909, A., i, 386.
- Δ^4 -*cyclo*Hexene-1:3-dicarboxylic acid (*tetrahydroisophthalic acid*), and its salts, anhydride, and anilic acid (PERKIN and PICKLES), 1905, T., 302; P., 75.
- Δ^3 -*cyclo*Hexene-1:3-dicarboxylic acid (Δ^3 -*tetrahydroisophthalic acid*), formation of (GOODWIN and PERKIN), 1905, T., 851; P., 187.
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- Δ^1 -*cyclo*Hexene-1:4-dicarboxylic acid (PERKIN), 1904, T., 420; P., 51.
- Δ^4 -*cyclo*Hexene-1:3-dicarboxylic acids (Δ^4 -*tetrahydroisophthalic acids*), *cis*- and *trans*- (PERKIN and PICKLES), 1905, T., 310; P., 76.
- Δ^1 - and *trans*- Δ^2 -*cyclo*Hexene-1:4-dicarboxylic acids, dimethyl ester of (RUPE and MÜNTER), 1910, A., i, 398.
- cyclo*Hexene-ethane and its nitrosochloride, nitropiperidide, and methoxyloxime (WALLACH and EVANS), 1908, A., i, 403.
- cyclo*Hexene-2-hexanol and its derivatives (WALLACH, WACKER, and PAULY), 1911, A., i, 473.
- cyclo*Hexene-2-*cyclo*hexanone (WALLACH), 1907, A., i, 220.
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- bicyclo*Hexenehexylamine (WALLACH, WACKER, and PAULY), 1911, A., i, 473.
- Δ^2 -*cyclo*Hexenemalonic acid and its ethyl ester, amide, and lactone (EYKMAN), 1909, A., i, 718.
- cyclo*Hexene- α -propionic acid, and its ethyl ester (WALLACH and EVANS), 1908, A., i, 403.
and its silver salt, and nitrile, and α -cyano-, methyl ester of (HARDING, HAWORTH, and PERKIN), 1908, T., 1961.
- α - Δ^1 -*cyclo*Hexenepropionic acid, methyl ester (AUWERS and ELLINGER), 1912, A., i, 188.
- Hexene series, studies in the (ZELINSKY and PRSCHEVALSKY), 1908, A., i, 845.
- Hexenoic acid and anhydride, amino- (FISCHER and SCHLOTTERBECK), 1904, A., i, 549.
- $\Delta\alpha$ -Hexenoic acid, $\gamma\delta$ -trichloro-. See Hydrosorbic acid, trichloro-.
- $\Delta\gamma$ -Hexenoic acid, β -amino-. See Hydrosorbic acid, amino-.
- Hexenoic acids and their *p*-toluidides (FIGHTER and PFISTER), 1904, A., i, 548.
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- See also $\alpha\beta$ -Dimethyl- $\Delta\beta$ -butenoic acid, $\alpha\alpha$ -Dimethylisocrotonic acid, Dimethylvinylacetic acid, Ethylcrotonic acid, Hydrosorbic acid, Methylpentenoic acids, and Pyrotetric acid.
- $\Delta\beta$ -Hexen-8-ol and its acetate and chloride (REIF), 1908, A., i, 847; (BRÜHL), 1908, A., ii, 1002.
- Δ^1 -*cyclo*Hexen-1-ol, esters of (MANNICH and HÂNCU), 1908, A., i, 276.
- Δ^2 -*cyclo*Hexenol (BRUNEL), 1905, A., i, 869.

*cyclo*Hexenone, action of ammonia on (KNOEVENAGEL and ERLER), 1903, A., i, 636.

Δ^2 -*cyclo*Hexenone ($\Delta^{1:5}$ -dihydrophenol) (TSCHUGAEFF), 1910, A., i, 245.

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Δ^2 -*cyclo*Hexenone ($\Delta^{1:5}$ -dihydrophenol), derivatives of (GARNER), 1904, A., i, 252.

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Δ^2 -*cyclo*Hexen-3-one, 3-bromo- and 3-chloro-, and their semicarbazones (CROSSLEY and HAAS), 1903, T., 494; P., 75.

*cyclo*Hexenones, dichloro-, from *o*-cresol (AUWERS and v. DER HEYDEN), 1909, A., i, 592.

Δ^3 -*cyclo*Hexen-2-one-1-carboxylic acid. See $\Delta^{1:3}$ -Dihydrosalicylic acid.

Δ^6 -*cyclo*Hexen-2-one-1-carboxylic acid and its ethyl ester (KÖTZ and GRETHE), 1910, A., i, 25.

*cyclo*Hexenecarboxylic acids, esters, constitution of (MERLING, WELDE, and SKITA), 1905, A., i, 349.

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*cyclo*Hexenyl acetate (MANNICH), 1906, A., i, 432.

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Δ^1 -*cyclo*Hexenyl methyl ketone and its oxime and semicarbazone (WALLACH and EVANS), 1908, A., i, 403.

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4-*iso*Hexenylsalicylic acid (MEERWEIN), 1908, A., i, 90.

Δ^6 -Hexenyltrimethylammonium iodide (v. BRAUN and DEUTSCH), 1911, A., i, 938.

*iso*Hexeric acid (FITTIG, BORSTELMANN, and LURIE), 1904, A., i, 968.

$\Delta\gamma$ -Hexine- β -diol, stereochemical isomeric dibromides and diacetyl derivatives of (DUPONT), 1910, A., i, 85.

$\Delta\beta$ -Hexinene, course of the addition of water to (MICHAEL), 1906, A., i, 559.

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$\Delta\gamma$ -Hexinene- β -diol, $\alpha\alpha\alpha\zeta\zeta\zeta$ -hexachloro- and its derivatives (DUPONT), 1910, A., i, 379.

Hexinoic acid (γ -methyl- α -pentinoic acid; isopropylpropionic acid), and its esters (MOUREU and DELANGE), 1903, A., i, 312.

α -Hexinoic acid (propylpropionic acid) and its esters (MOUREU and DELANGE), 1903, A., i, 312.

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Hexoamide, diiodo- (CURTIUS and MÜLLER), 1904, A., i, 482.

*iso*Hexoamide (MARCKWALD and NOLDA), 1909, A., i, 351.

*iso*Hexoamide, bromo- (BERGELL and v. WÜLFING), 1910, A., i, 304.

*iso*Hexoanilide (FOURNIER), 1909, A., i, 759.

Hexoic acid, constitution of, in butter fat (RAPER), 1907, A., ii, 371.

n-Hexoic acid (caproic acid), oxidation of, with permanganate (PASCHEVALSKY), 1911, A., i, 947.

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d-methylhexylcarbinyl ester of (HILDITCH), 1911, T., 222.

n-Hexoic acid, *l*-amino-, copper salt (NEUBERG and WOLFF), 1903, A., i, 74.

α -amino-. See Leucine.

ϵ -amino-, and its oxidation (WALLACH), 1906, A., i, 175.

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i- $\alpha\epsilon$ -diamino-. See *i*-Lysine.

aminohydroxy-, and $\alpha\epsilon$ -dihydroxy- (SZYDŁOWSKI), 1907, A., i, 18.

ϵ -amino- α -hydroxy-, and its calcium salt, and benzoyl derivative (FISCHER and ZEMPLÉN), 1910, A., i, 101.

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$\gamma\delta$ -trichloro- β -hydroxy-, and its methyl and ethyl esters and sodium salt (RIEDEL and STRAUBE), 1909, A., i, 550.

δ -cyano-, and its silver salt (BEST and THORPE), 1909, T., 712.

β -iodo- γ -hydroxy-, lactone of (BOUGAULT), 1908, A., i, 537.

α -nitro-, potassium salt, and α -oximino- (SCHMIDT and DIETERLE), 1910, A., i, 815.

α -nitroso-, ethyl ester (SCHMIDT and WIDMANN), 1909, A., i, 454.

- iso*Hexoic acid, ethyl ester, α -carbamide of (BOUVEAULT and LOCQUIN), 1905, A., i, 33.
- iso*Hexoic acid, α -bromo-, resolution of (FISCHER and CARL), 1907, A., i, 9.
- dl*- α -bromo-, ethyl ester, and *dl*-, *d*-, and *l*- α -hydroxy-, and their derivatives (SCHEIBLER and WHEELER), 1911, A., i, 835.
- d*- α -bromo-, and its chloride, preparation of (FISCHER), 1906, A., i, 811.
- l*- α -bromo-, ethyl ester (FISCHER), 1907, A., i, 194.
- γ -bromo-, ethyl ester (JONES and TATTERSALL), 1904, T., 1693; P., 218.
- α -hydroxy-, ethyl ester (BOUVEAULT and LOCQUIN), 1905, A., i, 32.
- dithio- (isocamylcarbithionic acid) (HOUBEN and POHL), 1907, A., i, 475.
- Hexoic acids, *l*- and *d*- (NEUBERG and REWALD), 1908, A., i, 310.
- See also α -*tert*.-Butylacetic acid, Dimethylbutyric acids, α -Ethylbutyric acid, and Methylvaleric acids.
- iso*Hexoic anhydride (FOURNIER), 1909, A., i, 759.
- iso*Hexolactone, new synthesis of (JONES and TATTERSALL), 1904, T., 1691; P., 218.
- Hexone bases of liver tissue (WAKEMAN), 1905, A., ii, 467, 841.
- in tubers of potatoes and dahlia (SCHULZE), 1904, A., ii, 282.
- isolation of (SCHULZE), 1904, A., i, 446.
- analyses of (KOSSEL and PATTEN), 1903, A., ii, 582.
- n*-Hexonitrile (capronitrile) (HENRY), 1905, A., i, 561; (MARCKWALD and NOLDA), 1909, A., i, 351; (V. BRAUN and TRÜMPFLER), 1910, A., i, 26.
- n*-Hexonitrile, ϵ -amino-, *N*-benzoyl derivative of (V. BRAUN and STEINDORFF), 1905, A., i, 206; (V. BRAUN), 1907, A., i, 524.
- Hexonoin (BOUVEAULT and LOCQUIN), 1906, A., i, 783.
- derivative of (BOUVEAULT and LOCQUIN), 1905, A., i, 572.
- Hexophenone, ϵ -amino-, and its additive salts (GABRIEL and COLMAN), 1908, A., i, 649.
- benzoyl derivative, and its picrate (GABRIEL), 1909, A., i, 492.
- Hexose, fermentation of, in the presence of a phosphate (YOUNG), 1910, A., i, 12.
- compound of a, with adenine (MANDEL and DUNHAM), 1912, A., i, 320.
- Hexose phosphate, action of enzymes on (HARDING), 1912, A., i, 928.
- Hexoses, action of copper acetate on (MCLEOD), 1907, A., i, 172.
- formation of levulic acid from (ALBERDA VAN EKENSTEIN and BLANKSMA), 1910, A., i, 461.
- action of muscle plasma and pancreatic extract on (LEVENE and MEYER), 1912, A., ii, 577.
- reactions of the (OFNER), 1904, A., i, 798.
- colour reactions with (ALBERDA VAN EKENSTEIN, and BLANKSMA), 1911, A., ii, 554.
- cause of the colour reactions of (ALBERDA VAN EKENSTEIN and BLANKSMA), 1910, A., i, 762.
- β -hydroxy- δ -methylfurfuraldehyde as the cause of some colour reactions of (ALBERDA VAN EKENSTEIN and BLANKSMA), 1909, A., i, 288.
- Hexosephosphoric acid (v. LEBEDEF), 1911, A., i, 837.
- formed by yeast, composition of (HARDEN and YOUNG; YOUNG), 1911, A., i, 422.
- sodium salt, hydrolysis of (v. EULER and FUNKE), 1912, A., i, 336.
- ester (v. LEBEDEF), 1911, A., i, 837.
- and its compounds (v. LEBEDEF), 1910, A., i, 716.
- Hexoyl bromide (ANDRÉ), 1910, A., i, 563.
- iso*Hexoyl chloride, α -bromo- (FISCHER and KOENIGS), 1905, A., i, 31.
- Hexoylacetamide (MOUREU and LAZENNEC), 1907, A., i, 488.
- Hexoylactic acid and its ethyl ester, and homologues (LOCQUIN), 1904, A., i, 552.
- ethyl ester (MOUREU and DELANGE), 1903, A., i, 399.
- methyl ester (BOUVEAULT and BONGERT), 1903, A., i, 143.
- iso*Hexoylactic acid, ethyl ester, homologues of (LOCQUIN), 1904, A., i, 552.
- C*-*iso*Hexoylacetacetic acid, ethyl ester (LOCQUIN), 1904, A., i, 553.
- Hexoylacetone and its copper derivative (BOUVEAULT and BONGERT), 1903, A., i, 142.
- Hexoylacetoneitrile (MOUREU and LAZENNEC), 1907, A., i, 398.
- d*-*iso*Hexoyl-*d*-alanine (FISCHER), 1906, A., i, 810.
- d*-*iso*Hexoyl-*d*-alanylglycine, α -bromo- (ABDERHALDEN and FODOR), 1912, A., i, 951.
- iso*Hexoylamino-. See under the parent Substance.

- iso*Hexoyl-*l*-asparagines, *d*- and *l*-*α*-bromo- (FISCHER and KOENIGS), 1907, A., i, 486.
- iso*Hexoyl-*l*-aspartic acid, *d*-*α*-bromo- (FISCHER and FIEDLER), 1910, A., i, 657.
- d*-*α*-*iso*Hexoyl-*l*-cystine, *α*-bromo- (FISCHER and GERNGROSS), 1909, A., i, 367.
- iso*Hexoyldiglycylglycine, *α*-bromo-, and its ethyl ester (FISCHER and REUTER), 1905, A., i, 264.
- iso*Hexoylglucosamine, *α*-bromo- (HOPWOOD and WEIZMANN), 1912, P., 261.
- d*-*iso*Hexoyl-*d*-glutamic acid, *α*-bromo- (FISCHER), 1907, A., i, 902.
- iso*Hexoylglycine, *α*-hydroxy-, and its copper salt (FISCHER and GLUUD), 1909, A., i, 888.
- d*-*iso*Hexoylglycine, *α*-bromo- (FISCHER), 1906, A., i, 809.
- d*-*iso*Hexoylglycyl-*d*-alanine, *α*-bromo- (FISCHER and STEINGROEVER), 1909, A., i, 366.
- iso*Hexoylglycyl-*l*-aspartic acid, *d*-*α*-bromo- (FISCHER and FIEDLER), 1910, A., i, 656.
- iso*Hexoylglycylglycine, *α*-bromo-, and its ester (FISCHER), 1903, A., i, 799.
- iso*Hexoylglycylglycines, *α*-bromo-, and their chlorides (FISCHER), 1906, A., i, 145, 808.
- d*-*iso*Hexoylglycyl-*l*-leucine, *α*-bromo- (FISCHER and STEINGROEVER), 1909, A., i, 366; (ABDERHALDEN and WEBER), 1910, A., i, 719.
- d*-*iso*Hexoylglycyl-*d*-isoleucine, *α*-bromo- (ABDERHALDEN and SCHULER), 1910, A., i, 305.
- iso*Hexoylhexaglycylglycine, *d*-*α*-bromo- (FISCHER), 1907, A., i, 485.
- cyclo*Hexoylcyclohexene and its semicarbazone (DARZENS and ROST), 1911, A., i, 988.
- d*-*iso*Hexoyl-*l*-histidine, *α*-bromo-, and its methyl ester (FISCHER and CONE), 1908, A., i, 1005.
- iso*Hexoyl-leucine and -tyrosine, *α*-bromo- (FISCHER), 1904, A., i, 652.
- d*-*iso*Hexoyl-*l*-leucine, *α*-bromo- (FISCHER), 1906, A., i, 810.
- d*-*iso*Hexoyl-*d*-isoleucine, *α*-bromo- (ABDERHALDEN, HIRSCH, and SCHULER), 1909, A., i, 770.
- d*-*iso*Hexoyl-*l*-isoleucine, *α*-bromo- (ABDERHALDEN and SCHULER), 1910, A., i, 305.
- dl*-*iso*Hexoyl-*dl*-isoleucine, *α*-bromo- (ABDERHALDEN, HIRSCH, and SCHULER), 1909, A., i, 770.
- iso*Hexoyl-leucines, *α*-bromo-, optically active (FISCHER and KOELKER), 1907, A., i, 687.
- iso*Hexoyl-leucylglycylglycine, *α*-bromo- (FISCHER), 1904, A., i, 653.
- iso*Hexoyl-*α*-methylisoserines, *α*-bromo-, *A*- and *B*-compounds of (KAY), 1908, A., i, 774.
- iso*Hexoyloctaglycylglycine, *d*-*α*-bromo- (FISCHER), 1907, A., i, 486.
- sec*-Hexoyloctylacetic acid, ethyl ester (LOCQUIN), 1904, A., i, 552.
- Hexoylphenylacetylene (ANDRÉ), 1910, A., i, 563.
- iso*Hexoyl-*N*-phenylglycine, *α*-bromo-, and *α*-hydroxy-, and its amide and anhydride (FISCHER and GLUUD), 1909, A., i, 887.
- Hexoyl-phenyl- and -phenylbenzyl-thiocarbamides (DIXON), 1904, T., 809; P., 128.
- d*-*iso*Hexoyl-*l*-proline, *α*-bromo-, and *α*-hydroxy-, amide and lactone of (FISCHER and REIF), 1908, A., i, 1008.
- dl*-*iso*Hexoylsarcosine, *α*-bromo- (FISCHER and GLUUD), 1909, A., i, 888.
- Hexoylthiocarbimide (DIXON), 1904, T., 807; P., 128.
- ab*-Hexoyl-*o*- and -*p*-tolylcarbamides and -thiocarbamides (DIXON), 1904, T., 810; P., 128.
- d*-*iso*Hexoyltriglycyl-*l*-leucine, *α*-bromo- (FISCHER and STEINGROEVER), 1909, A., i, 367.
- iso*Hexoyltriglycyl-leucyloctaglycylglycine and -*l*-leucyltriglycyl-*l*-leucyloctaglycylglycine, *d*-*α*-bromo- (FISCHER), 1907, A., i, 486.
- d*-*iso*Hexoyltriglycyl-*l*-tyrosine, *α*-bromo- (FISCHER), 1907, A., i, 901.
- iso*Hexoyltryptophan, *l*-bromo- (FISCHER), 1910, A., i, 22.
- d*-*iso*Hexoyl-*l*-tryptophyl-*d*-glutamic acid, *α*-bromo- (ABDERHALDEN), 1909, A., i, 603.
- d*-*iso*Hexoyl-*l*-tyrosine, *α*-bromo- (ABDERHALDEN and HIRSZOWSKI), 1908, A., i, 888.
- iso*Hexoyl-*d*-valine, *d*-*α*-bromo- (FISCHER and SCHEIBLER), 1908, A., i, 958.
- Hexyl acetate, pentabromo- (PERKIN and SIMONSEN), 1905, T., 857; P., 189.
- bromide (MABERY and QUAYLE), 1906, A., i, 395.
- active, rotatory power of (CHARDIN), 1908, A., ii, 913.
- chloride, mercaptan, and nitrite (HENRY), 1905, A., i, 561.

Hexyl fluoride (PATERNO and SPALINO), 1907, A., i, 813.

iodide from mannitol, constitution of (RASETTI), 1905, A., i, 558; (MICHAEL and HARTMAN), 1907, A., i, 170.

*iso***Hexyl bromide** (BUELENS), 1909, A., i, 79.

*cyclo***Hexyl mercaptan** (BORSCHKE and LANGE), 1905, A., i, 766.

and its derivatives (MAILHE and MURAT), 1910, A., i, 374.

methyl sulphide, trithiocarbonate, and xanthate (BORSCHKE and LANGE), 1906, A., i, 165.

disulphide (MAILHE and MURAT), 1910, A., i, 374.

Hexyl alcohol (b.p. 116-125°) and bromide (DELACRE), 1906, A., i, 477.

Hexyl alcohol, constitution of, from the hexylene from mannitol (MICHAEL and HARTMAN), 1906, A., i, 551.

active, rotatory power of (CHARDIN), 1908, A., ii, 913.

*iso***Hexyl alcohol**, $\gamma\delta$ -dibromo-, acetate of (VAN AERDE), 1909, A., i, 79.

Hexyl alcohols. See also $\gamma\gamma$ -Dimethylbutan- β -ol, Dimethylisopropylcarbinol, Methylbutylcarbinols, Methyl-diethylcarbinol, α -Methylpentan- δ -ol, Pinacolyl alcohols, and Trimethylpropyl alcohol.

*cyclo***Hexyl ether** (IPATIEFF and PHILIPOFF), 1908, A., i, 342; (WILLSTÄTTER and HATT), 1912, A., i, 544.

*cyclo***Hexylacetic acid** (HOPE and PERKIN), 1909, T., 1364.

and its silver salt, amide, and nitrile (WALLACH), 1907, A., i, 617.

and α -cyano-, and ethyl ester (FREUNDLER and DAMOND), 1905, A., i, 890.

*cyclo***Hexylacetic acid**, α -amino-, and its picate (ZELINSKY and STADNIKOFF), 1906, A., i, 425.

β -bromo- (HARDING, HAWORTH, and PERKIN), 1908, T., 1960.

1-bromo-2-hydroxy-, lactone of (HARDING, HAWORTH, and PERKIN), 1908, T., 1963.

α -*cyclo***Hexylacetacetic acid** and its ethyl ester and its semicarbazone (HELL and SCHAAL), 1909, A., i, 593.

*cyclo***Hexylacetone** and its semicarbazone (FREUNDLER), 1906, A., i, 283.

*cyclo***Hexylacetylene** and its sodium derivatives (DARZENS and ROST), 1909, A., i, 899.

α -**Hexylacraldehyde** and its semicarbazone and compound with sodium hydrogen sulphite (SOMMELET), 1907, A., i, 109.

Hexylamine, ζ -bromo- and its additive salts, and ζ -chloro (V. BRAUN and STEINDOREFF), 1905, A., i, 827.

ζ -chloro- and its additive salts (V. BRAUN and MÜLLER), 1905, A., i, 635.

*iso***Hexylamine** and its salts (SABATIER and SENDERENS), 1905, A., i, 268.

*isohexyl*dithiocarbamate (KALUZA), 1910, A., i, 130.

β -*iso***Hexylamine**, hydroxy-, and its oxidation, and condensation with aldehydes (KOHN), 1905, A., i, 929.

and its phenylthiocarbamide (KOHN and LINDAUER), 1903, A., i, 73.

Hexylamines. See also δ -Methylpentane, α -amino-.

*cyclo***Hexylamine** and its derivatives (WALLACH), 1906, A., i, 175.

and its methyl and ethyl derivatives (SABATIER and SENDERENS), 1904, A., i, 661.

synthesis of (SABATIER and SENDERENS), 1904, A., i, 305.

acetyl derivative (GODCHOT), 1911, A., i, 134.

*cyclo***Hexylamine**, dihydroxy-, and its isomeride, and their hydrochlorides and nitrosoamines (BRUNEL), 1903, A., i, 680.

*cyclo***Hexylamino-2-, -3-, and -4-methylcyclohexanes** and their derivatives (SABATIER and MAILHE), 1912, A., i, 103.

α -*cyclo***Hexylamino- α -phenyl- Δ^{α} -hexen- δ -one** (ANDRÉ), 1911, A., i, 269.

Hexylamino- α -phenyl- Δ^{α} -penten- γ -one (ANDRÉ), 1911, A., i, 269.

*cyclo***Hexylaniline** and its methyl derivative (SABATIER and SENDERENS), 1904, A., i, 661.

synthesis of (SABATIER and SENDERENS), 1904, A., i, 305.

Hexylaconic acid and its oxidation (FITTIG and SIMON), 1904, A., i, 554.

Hexylbenzene (PATERNO and CHIEFFI), 1909, A., i, 393.

active (α -phenyl- γ -methylpentane), rotatory power of (CHARDIN), 1908, A., ii, 913.

and its sulphonic acid (KLAGES and SAUTTER), 1904, A., i, 302.

n-**Hexylbenzene**, ζ -bromo-, ζ -chloro-, and ζ -iodo- (V. BRAUN, DEUTSCH, and KRUBEK), 1911, A., i, 969.

- sec.*-Hexylbenzene. See $\alpha\gamma$ -Dimethylbutylbenzene.
- cyclo*Hexylbromopropylene (DE RESSEGUIER), 1910, A., i, 467.
- α -*cyclo*Hexylbutan- γ -ol and its salts (VAVON), 1912, A., i, 629.
- β -Hexyl- $\Delta\beta$ -butenoic acid, γ -cyano- (GUARESCHI), 1907, A., i, 1004.
- iso*Hexylcarbinol, β -amino-, action of methyl iodide on (KOHN), 1904, A., i, 933.
- cyclo*Hexylcarbinol and its mono- and di-methyl and isobutyl derivatives (SABATIER and MAILHE), 1904, A., i, 810.
- and its acetate and iodide (FAWORSKY and BORGMANN), 1908, A., i, 15.
- cyclo*Hexyldiethylamine picrate (DARZENS), 1910, A., i, 63.
- cyclo*Hexyl-diethyl-, -dimethyl-, and -diphenyl-carbinols (HELL and SCHAAL), 1907, A., i, 1050.
- cyclo*Hexyldimethylamine picrate (DARZENS), 1910, A., i, 63.
- cyclo*Hexyl-*p*-dimethylaminophenylcarbinol (SCHMIDLIN and V. ESCHER), 1908, A., i, 164.
- cyclo*Hexyldimethylsulphonium chloride, hydroxide, iodide, and platinichloride (BOESCHE and LANGE), 1906, A., i, 165.
- cyclo*Hexyldiphenylcarbinol (SCHMIDLIN and V. ESCHER), 1908, A., i, 163.
- cyclo*Hexyldipropylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415.
- and its acetyl derivative (MURAT and AMOUROUX), 1912, A., i, 528.
- n*-Hexylene (ZELINSKY and PRSCHEVALSKY), 1908, A., i, 845.
- preparation of (VAN BERESTEYN), 1911, A., i, 761.
- action of heat on (ENGLER and ROUTALA), 1910, A., i, 2.
- Hexylenes.** See also Dimethylbutylenes and Methylamylenes.
- Hexylene** oxide and chlorohydrin, action of ammonia on (KRASSUSKY and DUDA), 1907, A., i, 1013.
- ozonide (HARMIES and HAEFFNER), 1908, A., i, 846.
- $\Delta\beta$ -Hexylene, δ -chloro-, and $\Delta\beta$ -Hexylen- δ -ol and its acetate (REIF), 1906, A., i, 394.
- α -iodo- (V. BRAUN and DEUTSCH), 1911, A., i, 938.
- $\Delta\epsilon$ -Hexylene, β -hydroxy-(methylcrotylcarbinol) (GARDNER and PERKIN), 1907, T., 851; P., 116.
- Hexylene alcohols.** See $\Delta\beta$ -Hexen- δ -ol and ζ -Methyl- $\Delta\beta$ -hexen- δ -ol.
- Hexylene glycols.** See β -Dimethylbutane- $\alpha\delta$ -diol, and Hexane- $\alpha\zeta$ -diol.
- Hexylene and heptylene series,** researches in the (PRSCHEVALSKY), 1909, A., i, 449.
- Hexylenediamine.** See $\beta\gamma$ -Dimethylbutane, $\beta\gamma$ -diamino-.
- Hexylenedicarboxylic acids.** See Methyl-ethylglutaconic acid, Methylpentenedicarboxylic acid, Methylpropylmaleic acid, and Trimethylglutaconic acids.
- Hexylene- $\alpha\zeta$ -dithiol** and its benzoate (V. BRAUN), 1910, A., i, 14.
- cyclo*Hexylethyl alcohol (ZELINSKY), 1908, A., i, 727.
- α -*cyclo*Hexylethylamine and its platinichloride (WALLACH and HAWORTH), 1912, A., i, 569.
- β -*cyclo*Hexylethylamine, preparation of, and behaviour of, towards nitrous acid (WALLACH), 1908, A., i, 426.
- cyclo*Hexylethylcarbinol (HELL and SCHAAL), 1909, A., i, 593.
- cyclo*Hexylethylene, α -chloro- (DARZENS and ROST), 1909, A., i, 900.
- cyclo*Hexyl ethyl ketone and its semicarbazone (HELL and SCHAAL), 1909, A., i, 593.
- β -*cyclo*Hexyl-*d*-glucoside and its tetraacetyl derivative (FISCHER and HELFERICH), 1911, A., i, 802.
- β -Hexylglutaric acid and its anhydride, anilide, and nitrile (BLAISE and GAULT), 1907, A., i, 281.
- β -Hexylglutaric acid, $\alpha\gamma$ -dicyano- (KNOEVENAGEL), 1905, A., i, 169.
- β -Hexylglycerol, $\alpha\gamma$ -diethyl ether (SOMMELET), 1907, A., i, 108.
- cyclo*Hexylglycine (hexahydrophenylglycine) and its derivatives (ZELINSKY and ARZIBACHEFF), 1907, A., i, 691.
- cyclo*Hexylglycollic acid (ZELINSKY and SCHWEDOFF), 1908, A., i, 864.
- sodium and silver salts, and its amide (GODCHOT and FREZOULS), 1910, A., i, 480.
- δ -*cyclo*Hexylheptane (AMOUROUX and MURAT), 1912, A., i, 415, 528.
- cyclo*Hexylcyclohexanol (SABATIER and MAILHE), 1904, A., i, 667.
- 2-cycloHexylcyclohexanol** (WALLACH), 1907, A., i, 220.
- and its phenylurethane (WALLACH and OST), 1911, A., i, 473.
- cyclo*Hexyl-2-cyclohexanone and its derivatives (WALLACH and OST), 1911, A., i, 473.
- cyclo*Hexyl-2-cyclohexanoneisooxime (WALLACH and OST), 1912, A., i, 568.

- 2-cycloHexyl- Δ^1 -cyclohexene** and its nitrosochloride (WALLACH and OST), 1911, A., i, 473.
- ϵ -cycloHexylhexoic acid**, ϵ -amino-, ϵ -hydroxy-, and their derivatives (WALLACH and OST), 1912, A., i, 568.
- cycloHexylhydrazine** (KIJNER and BELOFF), 1911, A., i, 678.
- cycloHexylideneacetic acid** (HARDING, HAWORTH, and PERKIN), 1908, T., 1961.
formation of (HOPE and PERKIN), 1909, T., 1366.
- cycloHexylideneazine** (KIJNER and BELOFF), 1911, A., i, 678.
- Hexylidenediacetamide** (REICH), 1905, A., i, 35.
- cycloHexylidene-ethylene** (EGOROVA), 1911, A., i, 959.
- cycloHexylidenehydrazine hydrate** and its derivatives (KIJNER and BELOFF), 1911, A., i, 678.
- cycloHexylidenetetramethyldiaminodiphenylmethane** (WAHL and MEYER), 1910, A., i, 134.
- Hexylitaconic acid**, oxidation of (FITTIG and SIMON), 1904, A., i, 554.
- Hexylitartaric acid** and its salts (FITTIG and SIMON), 1904, A., i, 554.
- cycloHexylmalonic acid** and its ethyl ester (FREUNDLER and DAMOND), 1905, A., i, 890; (EYKMAN), 1909, A., i, 718.
and its ethyl ester, and potassium salt, and α -bromo-, and its ethyl ester and reactions of (HOPE and PERKIN), 1909, T., 1363; P., 207.
- cycloHexylmethylecarbinol** (BOUVEAULT), 1904, A., i, 62.
- 2-cycloHexyl-1-methylcyclohexan-2-ol** (MURAT), 1909, A., i, 147.
- 3-cycloHexyl-1-methylcyclohexan-3-ol** and its phenylurethane (MAILHE and MURAT), 1911, A., i, 127.
- 3-cycloHexyl-1-methylcyclohexene** and its nitrosochloride (MAILHE and MURAT), 1911, A., i, 127.
- cycloHexyl methyl ketone** (*hexahydroacetophenone*) (HELL and SCHAAL), 1907, A., i, 1049.
and its *p*-nitrophenylhydrazone (WALLACH and EVANS), 1908, A., i, 404.
and its semicarbazone and sodium bisulphite compound (BOUVEAULT), 1904, A., i, 62.
synthesis of (DARZENS), 1907, A., i, 627.
oxidation of, and its oxime (GODCHOT), 1911, A., i, 134.
- cycloHexyl methyl ketone**, 1-hydroxy-, and its semicarbazone (WALLACH and HAWORTH), 1912, A., i, 569.
- 3-cycloHexyl-1-methyl-4-isopropyl-3-cyclohexanol** (MURAT), 1911, A., i, 890.
- 3-cycloHexyl-1-methyl-4-isopropylcyclohexene** (MURAT), 1911, A., i, 890.
- cycloHexyl- ψ -nitrole** (NAMETKIN), 1910, A., i, 829.
- 5-Hexylisooxazole** (MOUREU and DELANGE), 1904, A., i, 650.
- 3-cycloHexylisooxazolone** (WAHL and MEYER), 1908, A., i, 891.
- Hexylisooxazonimine** and its acetyl derivative (MOUREU and LAZENNEC), 1907, A., i, 717.
- isoHexylparabanic acid** (KALUZA), 1910, A., i, 131.
- Hexylparaconic acid**, hydroxy-, and its salts (FITTIG and SIMON), 1904, A., i, 554.
- cycloHexylphenol*** (WUYTS), 1912, A., i, 598.
- 2-Hexylphenoquinioxaline-3-carboxylic acid**, ethyl ester (WAHL and DOLL), 1912, A., i, 536.
- cycloHexylpropinene** (DE RESSÉGUIER), 1910, A., i, 467.
- Hexylpropionaldehyde** and its *o*-diethyl ether (MOUREU and DELANGE), 1904, A., i, 650.
- cycloHexylpropionic acid** and its methyl and ethyl esters (DARZENS and ROST), 1909, A., i, 899.
- Hexylpropionic acids**, *n*- and *iso*-. See Noninoic acids.
- cycloHexylpropionic acid** and its amide (ZELINSKY), 1908, A., i, 864.
- α -cycloHexylpropionic acid**, 1-hydroxy-, methyl ester (AUWERS and ELLINGER), 1912, A., i, 188.
- α -cycloHexyl-*n*- and -*iso*-propyl alcohols** (FREUNDLER), 1906, A., i, 283.
- n*-Hexylisopropylecarbinol**, rotation of (PICKARD and KENYON), 1911, P., 324.
- cycloHexylpropylene dibromide** (DE RESSÉGUIER), 1910, A., i, 467.
- 4-*n*-Hexylpyran-2:6-dicarboxylic acid** and its methyl ester (BLAISE and GAULT), 1907, A., i, 334.
- 3-Hexylpyrazoline**, 5-imino- (MOUREU and LAZENNEC), 1907, A., i, 159.
- Hexylpyrazolone** (MOUREU and DELANGE), 1903, A., i, 400.
- 3-cycloHexyl-5-pyrazolone** (WAHL and MEYER), 1907, A., i, 765.
- 2-Hexylpyrrolidine** and its additive salts and carbamide (BLAISE and HOUILLON), 1906, A., i, 764.
- 3-isoHexylrhodanic acid** (KALUZA), 1910, A., i, 130.
- cycloHexylselenol**, and its metallic derivatives (MAILHE and MURAT), 1910, A., i, 374.

*cyclo*Hexyl styryl ketone and its dibromide (FRÉZOULS), 1912, A., i, 629.

Hexylsuccinic acid, preparation of (HIGSON and THORPE), 1906, T., 1469; P., 242.

*cyclo*Hexyltetrollic acid and its methyl ester (DE RESSEGUIER), 1910, A., i, 467.

*iso*Hexylthiocarbamide (KALUZA), 1910, A., i, 181.

*iso*Hexylthiocarbimide (KALUZA), 1910, A., i, 181.

*iso*Hexylthioparabanic acid (KALUZA), 1910, A., i, 181.

Hexylthiophansulphone (MABERY and QUAYLE), 1906, A., i, 395.

*cyclo*Hexylthymomenthene (MURAT), 1911, A., i, 891.

*r-cyclo*Hexylthymomenthol (MURAT), 1911, A., i, 891.

Hibiscetin, from *Hibiscus sabdariffa*, and its acetyl derivative (PERKIN), 1909, T., 1858; P., 248.

Hibiscus sabdariffa, colouring matters of flowers of (PERKIN), 1909, T., 1855; P., 248.

Hillebrandite from Mexico (WRIGHT), 1909, A., ii, 61.

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- Hippuronitrile**, and *p*-bromo- and *m*- and *p*-nitro- (KLÄGES and HAACK), 1903, A., i, 560.
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- Hippurylalanine** and its salts, esters, hydrazides, urethane, amide, azoimide, and phenylcarbamide derivative (CURTIUS and LAMBOTTE), 1904, A., i, 835.
- Hippuryl- α -alanyl- α -alanine** and its salts, esters, hydrazides, azoimide, urethane, and carbamide and phenylcarbamide derivatives (CURTIUS and LAMBOTTE), 1904, A., i, 835.
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- Homopiperonal** (*protocatechualdehyde ethylene ether*) and its oxime, semicarbazone, nitrile, and amine (SEMMER and BARTELT), 1908, A., i, 901.
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C₁₀H₁₆, from isothujene (KONDAKOFF and SKWORZOFF), 1910, A., i, 755.

(C₁₀H₁₆)_x, from cineole (THOMS and MOLLE), 1904, A., i, 600.

C₁₀H₁₈, from reduction of ascaridole (WALLACH and MEYER), 1912, A., i, 879.

Hydrocarbon, $C_{10}H_{18}$, from the union of camphene and pinene with hydrogen (VAVON), 1910, A., i, 52.

$C_{10}H_{18}$, from carvomenthol (BRUNEL), 1910, A., i, 479.

$C_{10}H_{18}$, from citralhydrazone (KIJNER), 1911, A., i, 1028.

$C_{10}H_{18}$, from pinene hydrochloride, magnesium, and carbon dioxide (ZELINSKY), 1903, A., i, 185.

$C_{10}H_{18}$, from hydration products of pinene, and sulphuric acid (BARBIER and GRIGNARD), 1909, A., i, 501.

$C_{10}H_{18}$, from α -pinene (ZELINSKY), 1911, A., i, 997.

$C_{10}H_{18}$, from the action of dilute sulphuric acid on propionepinacone (KOHN), 1905, A., i, 167.

$C_{10}H_{18}$, from propionepinacone (SAMEC), 1907, A., i, 746.

$C_{10}H_{18}$, from isopropylcyclopentan-3-one or from dihydropinolol, and its derivatives (WALLACH), 1911, A., i, 891.

$C_{10}H_{18}$, and its chloro-derivative from rock oil (AHRENS), 1907, A., i, 269.

$C_{10}H_{18}$, three isomeric, from thujane (KIJNER), 1911, A., i, 997.

$C_{10}H_{18}$, from thujene (KIJNER), 1911, A., i, 72.

$C_{10}H_{18}$, from xanthoxylene (SEMMER and SCHOSSBERGER), 1911, A., i, 1002.

$C_{10}H_{20}$, from $\gamma\gamma$ -dimethyloctylamine and nitrous acid (WALLACH and BEHNKE), 1912, A., i, 570.

$C_{10}H_{20}$, from the reduction of the hydrocarbon $C_{10}H_{18}$ (SAMEC), 1907, A., i, 746.

$C_{10}H_{20}$, from *Araucaria Cunninghamii* (BAKER and SMITH), 1911, A., i, 479.

$C_{10}H_{20}$, from citronellaldehydehydrazone and its derivatives (KIJNER), 1911, A., i, 1027.

$C_{10}H_{20}$, from dihydrothujaketone (WALLACH and CHALLENGER), 1911, A., i, 472.

$C_{10}H_{20}$, from the polymerisation of isoprene (LEBEDEFF), 1911, A., i, 26.

$C_{10}H_{20}$, from Philippine terpenes (BACON), 1908, A., i, 815.

$C_{10}H_{20}$, from thujane (KIJNER), 1911, A., i, 997.

$C_{10}H_{22}$, molecular refraction of (ROHLAND), 1910, A., ii, 809.

$C_{11}H_{10}$, from phenylacetylenyldimethylcarbinol (SKOSSAREWSKY), 1905, A., i, 774.

Hydrocarbon, $C_{11}H_{14}$, from dimethyldioscoridine (GORTER), 1911, A., i, 561.

$C_{11}H_{14}$, from α -phenyl- $\Delta\alpha\gamma$ -butadiene, hydrogen bromide, and zinc methyl (RIIBER), 1911, A., i, 979.

$C_{11}H_{18}$, from carvone and magnesium methyl iodide (RUPE and LIECHTENHAN), 1906, A., i, 374.

$C_{11}H_{18}$, and its derivatives, from ethylnopinol (WALLACH), 1907, A., i, 1059.

$C_{11}H_{18}$, and its derivatives, from ethylsabinaketol (WALLACH), 1907, A., i, 1060.

$C_{11}H_{18}$, from sandalwood (SCHIMMEL & Co.), 1910, A., i, 758.

$C_{11}H_{20}$, and its tetrabromide from β -dibromo- β -dimethylnonane (v. BRAUN and SOBECKI), 1911, A., i, 701.

$C_{11}H_{20}$ or $C_{11}H_{21}$, from 3-methylmenthan-3-ol and potassium hydrogen sulphate, and its bromo-derivative (VANIN), 1912, A., i, 788.

$C_{11}H_{22}$, from dipropylisobutylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415, 528.

$C_{12}H_{12}$, from phenylacetylenylmethyl ethylcarbinol (BORK), 1905, A., i, 774.

$C_{12}H_{16}$, from γ -phenyl- $\beta\beta$ -dimethylbutan- γ -ol (LUCAS), 1910, A., i, 378.

$C_{12}H_{18}$, from 1:3-dimethyl- Δ^3 -cyclohexene-5-trimethylcarbinol (AUWERS and PETERS), 1910, A., i, 842.

$C_{12}H_{18}$, from polymerisation of diisoprene (LEBEDEFF), 1911, A., i, 26.

$C_{12}H_{20}$, from $C_{12}H_{24}O_2$, hydriodic acid and phosphorus (SIELISCH), 1912, A., i, 886.

$C_{12}H_{20}$, from phosphorus trichloride and pinacolin pinacone (DELACRE), 1907, A., i, 579.

$C_{12}H_{20}$, and its dihydrochloride, from *n*-propylnopinol (WALLACH), 1907, A., i, 1060.

$C_{12}H_{22}$, from dimethyldipentene (RICHARD), 1911, A., i, 734.

$C_{12}H_{22}$, from menthone and magnesium ethyl iodide (VANIN), 1911, A., i, 474.

$C_{12}H_{22}$, from the action of dilute sulphuric acid on the pinacone from ethyl propyl ketone (GOLDBERGER and TANDLER), 1908, A., i, 58.

$C_{12}H_{24}$, from isoamyl iodide and acetic anhydride (VANIN), 1911, A., i, 416.

- Hydrocarbon**, $C_{12}H_{24}$, from dipropylisoamylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415, 527.
- $C_{12}H_{26}$, from dipropylisoamylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415.
- $C_{13}H_{14}$, from phenylacetylenylmethylisopropylcarbinol (BORK), 1905, A., i, 774.
- $C_{13}H_{22}$, from halogen derivatives of 1-methyl-4-isopropyl-3-allylcyclohexan-3-ol (SAYTZEFF), 1911, A., i, 475.
- $C_{13}H_{25}$, from cyclohexyldipropylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415.
- $C_{14}H_{12}$, from phenylpropionyl chloride and benzene (WATSON), 1904, T., 1325; P., 181.
- $(C_{14}H_{13})_x-(C_6H_5)_x$, from the action of magnesium *o*-tolyl bromide on xanthone (DECKER, v. FELLEBERG, and DINNEN), 1907, A., i, 1065.
- $C_{14}H_{16}$, from phenylacetylenylmethyl-tert.-butylcarbinol (NEWEROWITSCH), 1905, A., i, 775.
- $C_{14}H_{20}$, from benzyldipropylcarbinol (AMOUROUX and MURAT), 1912, A., i, 415.
- $C_{14}H_{28}$ and $C_{14}H_{28}$, from the dry distillation of urushic acid (MAJIMA and CHŌ), 1907, A., i, 1032.
- $C_{15}H_{14}$, and its dibromide, from $C_{17}H_{14}O_2$ (VORLÄNDER and SCHROEDTER), 1903, A., i, 496.
- $C_{15}H_{14}$, from the substance $C_{18}H_{10}O_6$ (DUREGGER), 1905, A., i, 702.
- $C_{15}H_{16}$, from the alcohol $C_{15}H_{18}O$ (BERTROND), 1905, A., i, 775.
- $C_{15}H_{24}$, from alcohol $C_{15}H_{26}O$ from oil of carnations (SEMMLER and MAYER), 1912, A., i, 480.
- $C_{15}H_{24}$ (two), from caryophyllene (DEUSSEN and LEWINSOHN), 1908, A., i, 354.
- $C_{16}H_{12}$, from the action of nickel carbonyl on naphthalene (DEWAR and JONES), 1904, T., 213; P., 6.
- $C_{16}H_{18}$, from camphor (CHABRIÉ), 1903, A., i, 245.
- $C_{16}H_{18}$, from the action of sodium alkyl on ethylbenzene (SCHORIGIN), 1908, A., i, 886.
- $C_{16}H_{20}$, from tert.-phenylfenchol and anhydrous formic or oxalic acid, and an isomeride and its bromo-derivative (LEROIDE), 1909, A., i, 596.
- $C_{17}H_{16}$, (two), from pentaerythritol tetrabromohydrin, benzene, and aluminium chloride (FECHE), 1907, A., i, 906.
- Hydrocarbon**, $C_{17}H_{18}$, from reduction of diphenylcyclobutylidenemethane (KJNER), 1911, A., i, 44.
- $C_{17}H_{18}$, from γ -diphenyl- β -dimethylpropan- γ -ol (RAMART-LUCAS), 1910, A., i, 378.
- $C_{17}H_{20}$, from the action of methylal on *p*-xylene (AUWERS), 1907, A., i, 918.
- $C_{17}H_{22}$, from tert.-benzylfenchol and anhydrous formic or oxalic acid (LEROIDE), 1909, A., i, 596.
- $C_{17}H_{26}$, and its bromine derivative, from phenyldi-isoamylcarbinol (SCHORIGIN), 1907, A., i, 754.
- $C_{18}H_{14}$, from magnesio-acetylene bromide and benzaldehyde (ODDO), 1904, A., i, 862.
- $C_{18}H_{16}$, from ω -dichloro-*p*-methyl-ethylbenzene (AUWERS and KEIL), 1903, A., i, 621.
- $C_{18}H_{18}$, and its dibromide, from the pinacone from phenyl ethyl ketone (STERN), 1906, A., i, 271.
- $C_{18}H_{20}$, from γ -diphenyl- β -dimethylbutan- γ -ol (RAMART-LUCAS), 1910, A., i, 378.
- $C_{18}H_{28}$, from the action of magnesium methyl iodide on ethyl 1-methyl- Δ^5 -cyclopentene-2-carboxylate (HAWORTH and PERKIN), 1908, T., 597.
- $C_{18}H_{38}$, from lichestic acid (BÖHME), 1903, A., i, 317.
- $C_{19}H_{18}$, from methyl α -phenylcinnamylidenacetate and magnesium methyl iodide (REIMER and REYNOLDS), 1908, A., i, 989.
- $C_{19}H_{20}$, from cyclohexyldiphenylcarbinol (HELL and SCHAAL), 1907, A., i, 1050.
- $C_{19}H_{26}$, from phenyldicyclohexylcarbinol (GODCHOT), 1910, A., i, 105.
- $C_{20}H_{24}$, from *p*- β -allyltoluene (TIFFE-NEAU), 1907, A., i, 305.
- $C_{21}H_{18}$, from benzophenone and ethylbenzene (CIAMICIAN and SILBER), 1910, A., i, 489.
- $C_{25}H_{22}$, from dyponone (DELACRE and GESCHÉ), 1904, A., i, 32.
- $C_{25}H_{24}$, isomeric, from the reduction of $C_{25}H_{22}$ (DELACRE and GESCHÉ), 1904, A., i, 32.
- $C_{25}H_{26}$, isomeric, from the reduction of $C_{25}H_{22}$ and $C_{25}H_{24}$ (DELACRE and GESCHÉ), 1904, A., i, 33.
- $C_{26}H_{22}$, from the action of aluminium chloride on naphthalene (HOMER), 1907, T., 1111; P., 88.
- $C_{27}H_{46}$, from cholesteryl chloride and methyl alcohol (DIELS and BLUMBERG), 1911, A., i, 971.

Hydrocarbon, $C_{27}H_{56}$, from *Tussilago farfara* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{28}H_{58}$, from *Antennaria dioica* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{28}H_{58}$, from *Tilia europea* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{29}H_{58}$, from magnesium *p*-tritoly-methyl chloride and benzaldehyde (SCHMIDLIN and HODGSON), 1908, A., i, 240.

$C_{29}H_{60}$, from *Matricaria chamomilla* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{29}H_{60}$, from the oil of *Myrica gale* (PICKLES), 1911, T., 1766; P., 220.

$C_{30}H_{58}$, and its bromo-derivatives, from the condensation of acetylene (JOVITSCHITSCH), 1908, A., i, 118.

$C_{30}H_{54}$, from the condensation of ethylene, and the action of bromine on it (JOVITSCHITSCH), 1908, A., i, 118.

$C_{30}H_{62}$, from *Arnica montana* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{32}H_{56}$, from the alcohol $C_{32}H_{58}O$, from α -isodypnopinacolin (DAELS), 1906, A., i, 357.

$C_{32}H_{66}$, from *Artemisia maritima* (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1101.

$C_{34}H_{56}$ or $C_{34}H_{50}$, from reduction of benzanthrone (BALLY, SCHOLL, and LENTZ), 1911, A., i, 677.

$C_{36}H_{56}$, from phenyldiphenylene-chloromethane (GOMBERG and CONE), 1906, A., ii, 414.

$C_{38}H_{58}$, from ethyl diphenyl-4:4'-dicarboxylate (TSCHITSCHIRABIN), 1907, A., i, 503.

$C_{40}H_{58}$, from the action of aluminium chloride on naphthalene (HOMER), 1907, T., 1112; P., 88.

$C_{48}H_{86}$, from acetylene (LOSANITSCH), 1908, A., ii, 33.

$C_{54}H_{82}$ (or $C_{54}H_{86}$), from the action of acetic anhydride on the pinacone $C_{54}H_{86}O_2$, from cholestenone (WINDAUS), 1906, A., i, 174.

Hydrocarbons from cholesterol (MAUTHNER and SUIDA), 1904, A., i, 50.

two, in the unsaponifiable portion of chrysalidene oil (MENOZZI and MORESCHI), 1908, A., i, 241.

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Hydrocarbons, optically active, from glycerides (LEWKOWITSCH and PICK; NEUBERG), 1907, A., i, 997.

from wool grease oleins (GILL and FORREST), 1910, A., i, 705.

of Galician petroleum, nitration of (ZALOZIECKI), 1903, A., i, 616.

in Italian petroleum (BALBIANO and ZEPPA), 1904, A., ii, 45.

in Louisiana petroleum (COATES and BEST), 1904, A., ii, 45; 1905, A., ii, 833.

from Roumanian petroleum (PONI), 1903, A., i, 593; (COSTĂCHESCU), 1911, A., i, 101.

from various petroleum (MABERY; MABERY and PALM; MABERY and SIEPLEIN), 1905, A., i, 313.

of vegetable origin (KLOBB, GARNIER, and EHRWEIN), 1910, A., ii, 1100.

formation of, in nature (ENGLER), 1910, A., i, 160.

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formation of, from carbon monoxide (VIGNON), 1911, A., i, 101.

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formation of, from haloid derivatives (SABATIER and MAILHE), 1904, A., i, 303; (BERTHELOT), 1904, A., i, 304.

formation of, by the interaction of metals of the aluminium groups with organic haloids (SPENCER and WALLACE), 1908, T., 1827; P., 194.

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formation of, by the hydrogenation of aromatic nitriles (SABATIER and SENDERENS), 1905, A., i, 268.

formation of, from thiopinacones (MANCHOT and KRISCHE), 1905, A., i, 142.

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Hydrocarbons, preparation of, by the catalytic decomposition of alkylidenehydrazines (KIJNER), 1911, A., i, 679, 1027; (KIJNER and ZAVADOVSKY), 1911, A., i, 1028.

preparation of, by the action of ammonium sulphide on aliphatic aromatic ketones (WILLGERODT and SCHOLTZ), 1910, A., i, 392.

preparation of, by the reduction of aromatic carbinols (KLAGES, GIESER, and LAUCK), 1906, A., i, 661.

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oxidation of, by air in presence of phosphorus (COLSON), 1908, A., i, 435.

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Hydrocarbons, dibromo-, action of ethyl sodioacetate on (SOLONINA), 1905, A., i, 112.

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Hydrocarbons, acetylenic, in Louisiana petroleum (COATES), 1906, A., i, 329.

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Hydrocarbons, aromatic, substituted, oxidation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), 1907, A., i, 202.

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- $\alpha\beta$ -Hydromuconic acid**, α -cyano- β -hydroxy-ethyl hydrogen ester, lactone of (BEST and THORPE), 1909, T., 1524.
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- Hydrophenanthrenes** (SCHMIDT and MEZGER), 1907, A., i, 1022.
- Hydrophthalic acids** (ABATI), 1907, A., i, 419; (ABATI and MINERVA), 1907, A., i, 420; (ABATI and SOLIMENE), 1909, A., i, 104; (ABATI and DE HORATIIS; ABATI and VERGARI), 1909, A., i, 386.
- Hydrophthalic acids**, influence of the position of the ethylene linking on the characters of (ABATI), 1906, A., i, 958, 959; (ABATI and CONTALDI), 1906, A., i, 959.
- Hydrophthalic anhydrides**, influence of presence and position of the ethylene grouping on the refraction and dispersion of (ABATI and VERGARI), 1909, A., i, 386.
- Hydropinenaldehyde** and its oxime and semicarbazone (HOUBEN and DOESCHER), 1908, A., i, 27.
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- d*- and *l*-**Hydropinenecarboxylonitriles** (GRIGNARD and BELLET), 1912, A., i, 623.
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- α -Hydropiperic acid**, β -amino-, and its benzoyl derivative (POSNER and ROHDE), 1910, A., i, 847.
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- Hydropyridones**, *o*-amino- and *o*-hydroxy- (PICCININI), 1908, A., i, 908.
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- Hydroquinine**, esters of (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), 1912, A., i, 1013.
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- Hydrosol** and hydrogel, process of formation of (LOTTERMOSER), 1907, A., ii, 78, 851; 1910, A., ii, 278; (LOTTERMOSER and ROTHE), 1908, A., ii, 364.
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- Hydrosorbhydroxamoxine**, β -hydroxyl-amino-, hydroxide (POSNER and ROHDE), 1910, A., i, 847.
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- ⁷⁸⁰**Hydrotoluoin** (LAW), 1907, T., 750; 1911, T., 1116.
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- Hydrourushiol** and its diacetyl derivative (MAJIMA), 1912, A., i, 883.
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- Hydroxamsantolic anhydride** (FRANCESCONI and FERRUCCI), 1903, A., i, 829.
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- $C_{10}H_{18}O_3$, from the reduction of camphorquinone (MANASSE and SAMUEL), 1903, A., i, 45.
- $C_{10}H_{18}O_3$, from oxidation of fencholic acid, and its lactone, and an isomeric hydroxy-acid (WALLACH and LANGE), 1903, A., i, 813.
- $C_{10}H_{18}O_3$, and its urethane from the base, $C_{10}H_{19}O_2$ (SEMMLER), 1903, A., i, 353.
- $C_{10}H_{18}O_3$, from the aldol $C_{10}H_{18}O_2$ (MORAWETZ), 1905, A., i, 262.

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α -**Hydroxy-acids**, synthesis of (DUPONT), 1910, A., i, 456.

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- γ -Hydroxy-acids**, transformation of, with and without the addition of other acids, conceived as an ionic reaction (VISSER), 1905, A., ii, 511; (DE BRUYN), 1905, A., ii, 805. mechanism of the reaction by which, are converted into lactones (DE BRUYN), 1905, A., ii, 805.
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- δ -Hydroxyaldehydes**, action of organo-magnesium compounds on (FRANKE and KOHN), 1905, A., i, 111.
- o*-Hydroxyaldehydes**, migration of the acid residues in the phenylhydrazones of acylated (AUWERS and HANNEMANN), 1909, A., i, 439. aromatic, preparation of (WEIL), 1908, A., i, 800. See also Aldols.
- Hydroxyamidines** (LEY and HOLZWEISIG), 1903, A., i, 282.
- Hydroxyamino-acid**, new (NEUBERG and WOLFF), 1903, A., i, 12.
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- β -Hydroxybutyrase** (WAKEMAN and DAKIN), 1909, A., ii, 908.
- Hydroxycarboxylic acids**, alkyl esters, method of applying the Grignard reaction to (HOERING and BAUM), 1909, A., i, 570.
- α -Hydroxycarboxylic acids**, action of heat on (LE SUEUR), 1904, T., 827; P., 14, 132; 1905, T., 1888; P., 285; 1907, T., 1365; P., 196; 1908, T., 716; P., 70.
- 2-Hydroxycoumarones**, *C*-acyl derivatives of (AUWERS), 1912, A., i, 484.
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- β -Hydroxy- $\alpha\alpha$ -dialkyl ketones** (BLAISE and HERMAN), 1908, A., i, 318.
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- Hydroxy-iminic acids**, preparation of substituted (CUSMANO), 1910, A., i, 50.
- Hydroxy-ketone**, $C_8H_{13}O_2$, and its semicarbazone, from the oxidation of dicyclo-octene (WILLSTÄTTER and VERAGUTH), 1907, A., i, 303. $C_8H_{16}O_2$, and its semicarbazone, from the reduction of oxoctenol (PRIELSCHAEFF), 1904, A., i, 795. $C_{21}H_{38}O_2$, from magnesium phenyl bromide and ethyl malonate (DILTHEY and LAST), 1904, A., i, 667.
- Hydroxy-ketones (acyloins)**, condensation of sodium derivatives of, with esters of the acetic series (BOUVEAULT and LOCQUIN), 1907, A., i, 479; 1910, A., i, 92. leuco-derivatives of (KÖNIG and v. KOSTANECKI), 1907, A., i, 62. aromatic (AUWERS), 1904, A., i, 66. saponifiability of ethers of (AUWERS and RIETZ), 1907, A., i, 938. hydrazones of (TORREY and KIPPER), 1907, A., i, 325; 1908, A., i, 460. fatty, hydrogenation of (BOUVEAULT and LOCQUIN), 1906, A., i, 783. oxidation of (BOUVEAULT and LOCQUIN), 1906, A., i, 803. of the type $R \cdot CO \cdot CH(OH) \cdot R$, preparation of (BOUVEAULT and LOCQUIN), 1906, A., i, 782.
- o*-Hydroxy-ketones**, capacity for transformation of acyl derivatives of phenylhydrazones of (AUWERS and DANNEHL), 1909, A., i, 441. compounds of, with tin tetrachloride (PFEIFFER, GOLDBERG, and KUNTNER), 1911, A., i, 899.
- Hydroxyketonic acid**, $C_{37}H_{44}O_4$, and its sodium salt, methyl ester, and oxime (WINDAUS), 1904, A., i, 667.
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- Hydroxylamine**, action of cyanogen bromide on (WIELAND), 1904, A., i, 628; 1905, A., i, 420; (WIELAND and BAUER), 1907, A., i, 491.
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- Hydroxymethylene** compounds, reduction of (KÖTZ and SCHAEFFER), 1912, A., i, 603.
- α -Hydroxynitriles**, interaction of derivatives of iminodicarboxylic acids and (STADNIKOFF), 1909, A., i, 771.
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